25th OCTOBER 1961 VOL. 133 NUMBER 3437

THE ORIGINAL 'DO-IT-YOURSELF' MAGAZINE

HOBBIES weekly

FOR ALL HOME CRAFTSMEN

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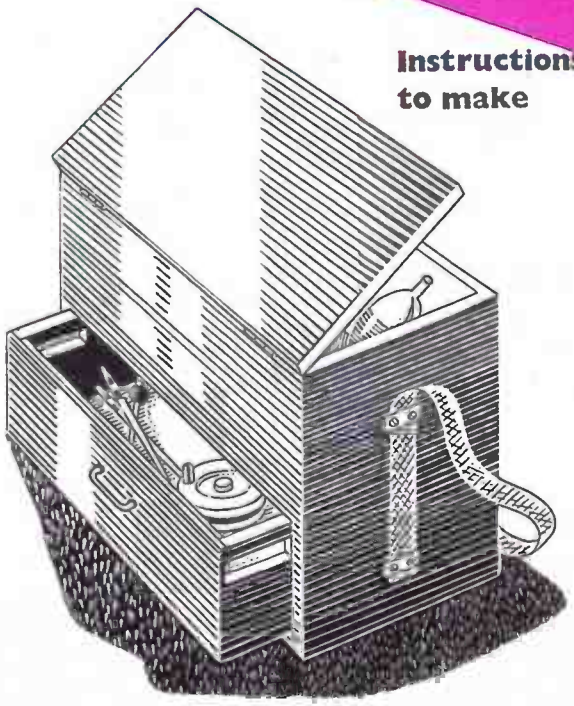
ETC. ETC.

Instructions to make



BOX AND SEAT

(FOR THE ANGLER AND HIS TACKLE)

Hobbies

Up-to-the-minute ideas

Practical designs

Pleasing and profitable things to make

5D

ALTHOUGH over 20 years old, this set of cigarette cards of 'Old Inns' issued by W. D. & H. O. Wills is still obtainable for about 5s.

Of the 40 inns depicted surely the most curious is 'Ye Olde Trip to Jerusalem', Nottingham (illustrated). Bearing the date A.D. 1189, it is claimed to be the oldest inn in England. It was in this year that Richard I left for the Holy Land, and it is quite probable that the Crusaders met here for refreshment. Standing at the

CARDS IN CIRCULATION

OLD INNS

foot of Castle Rock, this quaint old inn has its cellars and most of its rooms literally hewn out of the solid rock. Many are the stories told of this historic house. A passage, known as 'Mortimer's Hole', leads into the Castle above, and it is said that Roger Mortimer, Earl of March (1287–1330), used this as a means of access to Queen Isabella's apartment.

The 'Scole Inn' (illustrated) is a famous coaching house situated on the main Ipswich-Norwich road. A local parish register of St. Andrew's Church, Scole, records that King Charles II breakfasted at the White Hart (as it was then called) in September, 1671 — 'at the charge of the Rt. Hon. Lord Cornwallis'! The inn was built in 1655 by James Peck, a Norwich merchant. Peck employed a wood-carver named Fairchild to design and build, at a fee of £1,057, 'the noblest sighnepost in England'. This elaborate structure, which spanned the road, bore richly-carved figures 'of Charon and Cerberus, Actaeon and Diana, and many others; the signe itself is a "White Hart", which hanges downe carved in a stately wreath'.

Described by Charles Dickens as a 'clean and comfortable ale-house', the old 'Leather Bottle' is a charming timber-frame house just off the main London-Rochester road. Lovers of Dickens come from all parts of the country to visit the inn, and one of the rooms is devoted entirely to relics and pictures associated with the great novelist, including his favourite chair.

The 'London Apprentice' at Isleworth is at least 500 years old. It is supposed to have received its rather unusual name from the fact that apprentices from the Livery Companies of London used to row up the river and land at Isleworth for refreshment.

Standing at the head of Glencoe in the heart of the Highlands, the 'Kingshouse' today is a favourite fishing and mountaineering centre. The great Highland bard, Duncan MacIntyre, was a frequent visitor at the time when he was a shepherd. Coleridge and Wordsworth both spent nights at the inn.

In High Street, Winchester, is the remarkable half-timbered 'Hostel of God-Begot' (illustrated). The house takes its unique name from Aelfric, surnamed Godcbegeata or Goodsgetter, and visitors are still reminded of its ancestry by the Saxon names attached to many of the rooms.

Other cards in this series feature equally interesting subjects and you will find this set of cards colourful in design and well worth having.

* * *

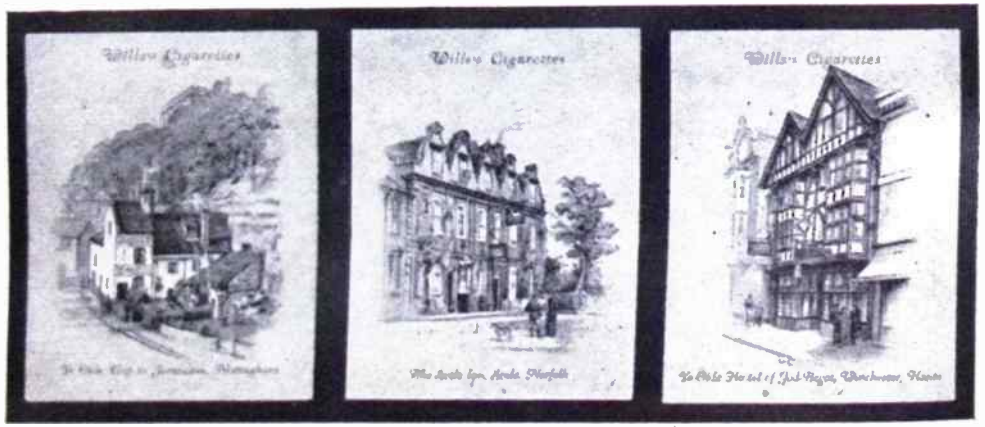
BULGARIA

THE 'BLACH SEA PHAUNA' pictorials of Bulgaria were released on June 19th, 1961. Designs are as follows:

2 ct. Green and dark brown — Seal.
16 ct. Blue and dark violet — Dolphin.
12 ct. Blue and rose — Medusa.
45 ct. Blue and brown — Sea Horse.
1 Lev. Green — Sea Fish.
1·25 Lev. Blue and brown — Sea Fox.

The first cosmonaut dogs — STRELKA, CHERNUSMKA, SVOSDOCHKA and BELKA — were depicted on a special stamp issued on June 28th.

The Russian Rocket to Venus was shown on another special stamp issued the same day.



Illustrated on front page

ANGLER'S BOX AND SEAT

THIS roomy tackle box, which can be slung over the shoulder, is ideal for the keen angler. Since it is strong enough to be used as a seat, it saves carrying extra weight in the form of a stool.

There is one large compartment at the top in which you can put items such as pike tackle, ground bait, plastic mac, etc. In the bottom is a drawer for smaller items such as quill floats, hooks, small reels etc. The drawer is held in place, while carrying, by means of a leather or canvas strap which also keeps the lid in position.

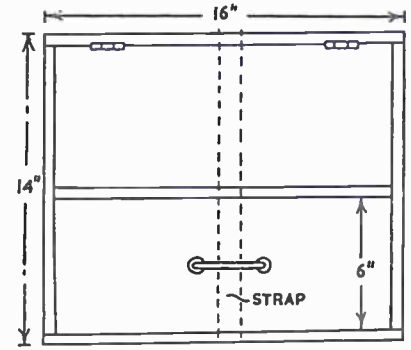
Use exterior grade plywood for preference. It will withstand wet conditions and if well painted will last for years. If you can obtain it locally the best grade to use is B.S.1088, which is a marine grade used for boats. It costs a little more but is well worth the extra shilling or two.

The main dimensions are shown in the front and side views in Fig. 1, but of course these may be modified to suit your own particular requirements. Note that the positions of the straps are shown dotted.

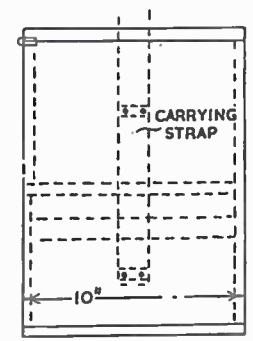
Pieces A, B, C, D, and E are cut from ½ in. plywood and are glued and screwed together as indicated in Fig. 2. The distance between pieces C and E is 6 in. as shown in the front view. Use waterproof glue throughout.

The lid F, is now added as seen in Fig. 3. The 1½ in. butt hinges are recessed to give a perfect fit. Reinforce the corners by adding triangular fillet. The drawer guides L are fixed to the ends A later, after the drawer is finished. Make up the drawer as shown in Fig. 4, cutting pieces G, H, and I from ½ in. plywood. The bottom can be of ¼ in. hardboard. Secure the pieces with glue and screws. Finish off by adding a front of ½ in. plywood as indicated in Fig. 5.

The Hobbies No. 703 handle is fixed



FRONT VIEW
Fig. 1



SIDE VIEW

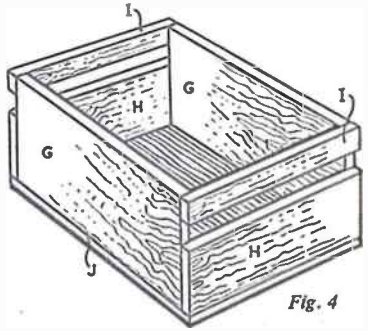


Fig. 4

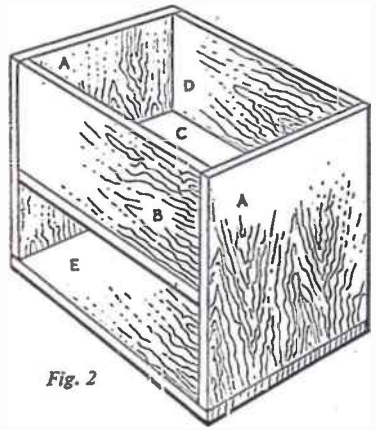


Fig. 2

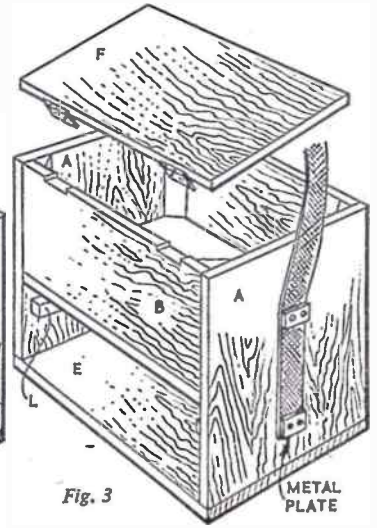


Fig. 3

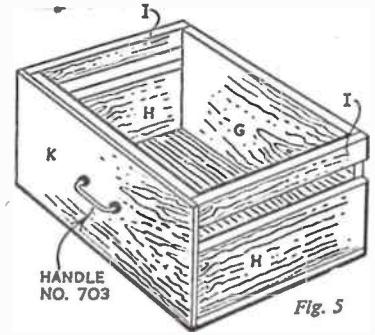
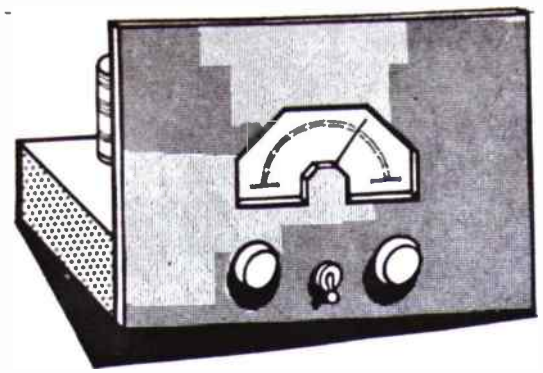


Fig. 5

in the position shown. You can obtain this chromium plated handle from Hobbies Ltd., Dereham, Norfolk, price 1s. 9d., postage 4½d.

The carrying strap, made from canvas webbing or leather, is fixed to the ends by means of metal plates secured by screws.

Clean up with glasspaper and give a coat of clear wood preservative such as Cuprinol. Finish off with an undercoat and two top coats of exterior grade paint. (Mh.)



Suitable for beginners

SHORT WAVE ONE-VALVER

Described by 'Radio Mech'

WITH a one valve set, stations can be received over very great distances on the short wave bands. The receiver described here uses plug-in coils, and can thus tune to any wavelength needed. It runs from a 1½V. dry battery, and 67½V. or similar H.T. battery, and both these batteries will last for a long time. The valve employed is a 1S5, or any of its equivalents, such as the CV784, DAF91, 1FD9, or ZD17.

For the filament supply, an 'all dry' receiver 1½V. battery can be used, or one or more torch battery cells. If more than one cell is employed, the cells must be wired in parallel, and more than 1½V. must never be used. With this kind of battery, the zinc case is negative.

The circuit is shown in Fig. 1, and the component valucs are not very critical. Those given are, however, most generally suitable. As the receiver is suitable for beginners, a few brief details of the components may be helpful.

Components used

The 100pF fixed condenser could be marked ·0001μF, which is the same. The 30pF condenser is a pre-set one. That, is it can be adjusted with a screwdriver. A 25pF or 50pF condenser may be fitted instead, without any effect on results.

The 300pF (·0003μF) variable condenser is for reaction, and is secured to the panel with a nut on its fixing bush.

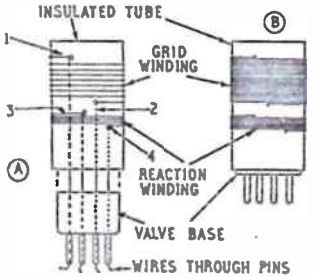


Fig. 2—Two plug-in coils

For tuning, an air-spaced condenser of about 150pF or 200pF is used, and is operated by a drum and cord reduction drive.

The High Frequency Choke should be for all-wave or short wave purposes. The valve requires a B7G holder. Any kind of on–off switch will be satisfactory. Two twin socket strips are also needed, for aerial, earth, and phone connections.

Tuning coils

The coils have two windings each, and can be made up as in Fig. 2. Here, an insulated tube is fitted to an old valve base, and the ends of the windings are taken to the valve pins. The required coil can then be inserted into the valve-holder or coil-holder, fitted in the receiver.

If coils are made in this way, it is necessary to have a number of old valve bases of the same type. These can be old 4-pin or 5-pin bases, or octal or other bases, with a holder to suit. If there are more than four pins, unrequired pins are simply left unused. The insulated tubes should be a tight fit on the valve bases, so that they can be cemented in position. Tubes can be made by winding glued

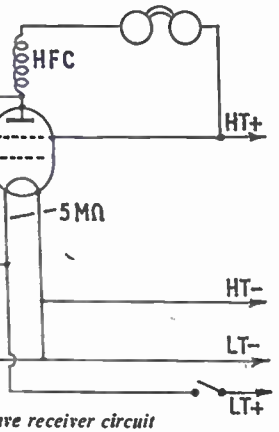


Fig. 1—Short-wave receiver circuit

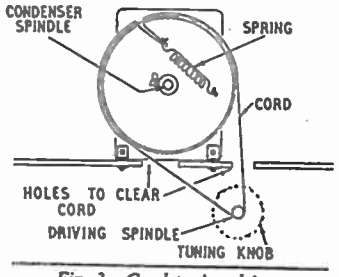


Fig. 3—Cord tuning drive

brown paper tightly round a suitable object, and allowing to dry. The tubes are then varnished, and again allowed to dry, to stiffen them, and improve insulation. Paxolin or card tubes can be cemented to the valve bases, or held in place with two small bolts.

If no old bases are to hand, ready-made plug-in coil formers can be used instead. These are available complete with pins and holder, and ready for winding.

Each coil has a grid winding, between points 1 and 2, and a reaction winding, between points 3 and 4. The windings must be connected correctly, so the ends are numbered in Figs. 1, 2 and 6. Fig. 6 shows a holder to take old type 4-pin valve bases. There is, of course, no need to use this type of holder, except for 4-pin bases. The plug-in coil formers mentioned must have the holder made for them, which has sockets in different positions. Octal valve bases will need an octal (8-pin) holder. The actual positions of the pins makes no difference at all. But all the coils must be made in the same way, so that any coil can be inserted in the holder.

With the coils for very low wavelengths, the grid turns are spaced, as at A in Fig. 2. The actual spacing is of no importance, and can be so as to give about eight or ten turns per inch. For the larger coils, turns are side by side, as at B. A clear space of about ¼ in. is left between grid winding and reaction winding, and both windings must be in the same direction, as in Fig. 2.

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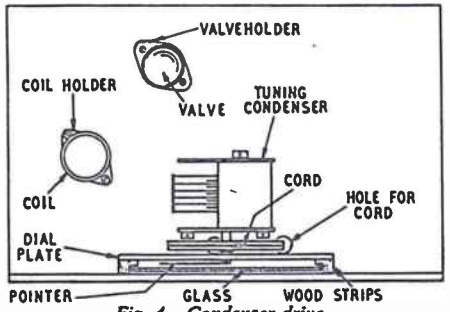

Fig. 4—Condenser drive and other parts

If old valve bases are used, melt the solder on the pins with an iron, and clear the pins out. Make a small hole in the tube, thread lead 1 down through its pin, and solder it. After winding the grid coil, take lead 2 down to its pin, draw it tight, and solder it. The reaction winding is made in the same way. Clip the wire ends off near the valve base pins, and clear away excess solder which would prevent the coil being inserted in its holder.

Ready-made plug-in formers may be 'threaded' or 'plain'. The coils have ribs, and the threaded formers have small notches in these ribs. The wire is wound in these notches, so as to give an evenly spaced winding. For the larger coils, plain formers are used, and have no notches in the ribs. The turns are then side by side.

If the exact number of turns listed is not employed, this will not reduce efficiency, but will merely alter the actual wavelengths covered slightly. In the same way, some changes to the diameter of the coil will be of no importance, and the exact gauge of wire given below need not be used.

Normally, all the coils given will not be needed, as two or three coils will cover the most important wavebands. However, it is quite easy to make extra coils, if it is necessary to tune as many bands as possible. This is, of course, one of the great advantages of a receiver using plug-in coils.

Coil 1. Grid: 7 turns 20 s.w.g., spaced. Reaction: 5 turns 28 s.w.g. enamelled, side by side. (14–31 metres).

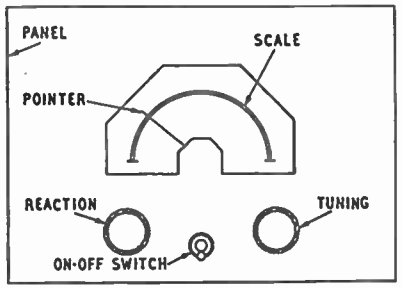

Fig. 5—Panel, tuning scale and controls

Coil 2. Grid: 20 turns 20 s.w.g., spaced. Reaction: 13 turns 32 s.w.g. enamelled, side by side. (30–65 metres).

Coil 3. Grid: 30 turns 24 s.w.g. enamelled, side by side. Reaction: 15 turns 32 s.w.g. enamelled, side by side. (50–100 metres).

Coil 4. Grid: 60 turns 26 s.w.g. enamelled, side by side. Reaction: 25 turns 36 s.w.g. enamelled, side by side. (100–200 metres).

These details are for formers about 1¼ in. in diameter. If a coil is required for medium wave listening, it can have 95 turns of 32 s.w.g. enamelled wire, side by side, with 45 turns of 36 s.w.g. enamelled or other fine wire for reaction. Alternatively, a ready-made medium wave coil can be mounted on an old valve base, and wired to the pins, so that it can be inserted in the holder.

Tuning drive

The tuning condenser is mounted on the receiver chassis by means of small brackets, or is attached to a large strong bracket at its fixing bush. The reduction drive drum is secured to the spindle with a set-screw, the spindle projecting about ¼ in. Fairly large clearance holes are cut in the chassis, so that the cord can pass down to the driving spindle, as in Fig. 3.

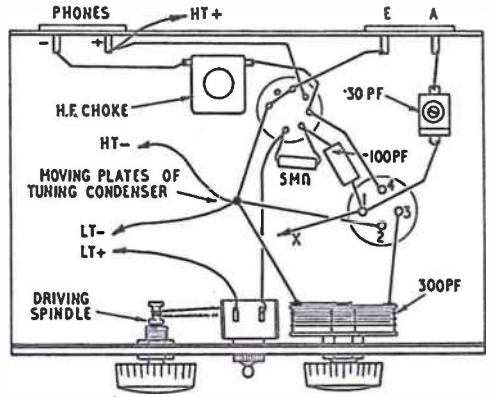

Fig. 6—Receiver wiring plan

The driving spindle bush will be seen in Fig. 6, and the bush nut holds it in place. The thin driving cord is taken once right round the driving spindle, up through the chassis holes, and round the drum. Both ends of the cord are drawn through the drum slot, and are attached to the spring, being tied so that the spring is under tension. The condenser vanes should be about half open when the drum slot is in the position in Fig. 3.

Fig. 4 shows how the dial is constructed. The condenser spindle projects through a clearance hole in the dial plate, which can be cut from thin wood. A wooden strip is glued to the dial plate and panel each side, to hold it as shown in Fig. 4. These strips are rebated to take a piece of glass. Celluloid or other transparent material would do instead.

A piece of 20 s.w.g. tinned copper or similar wire is drawn out straight, and soldered to the condenser spindle, to form the pointer.

The panel is shown in Fig. 5, and has a window through which the scale and pointer can be seen. Note that a projection is left in the centre, to conceal the condenser spindle.

When the parts have been prepared, the dial and drive can be fitted as shown, but the glass should be left out for the present. The scale is drawn upon strong white paper or thin card, and can be slipped into place behind the pointer.

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When the tuning position of various wavebands has been found, these can be marked on the scale. Finally, the glass can be inserted.

If a 0–180 degree scale is preferred, a cheap card protractor will do very well for this. The tuning positions for various stations can then be noted down in a log book. The tuning drive will work smoothly and easily, if the cord and pointer can move freely without touching any fixed parts.

Wiring up

The panel can be of 3-ply, about 8½ in. by 6 in. high. The chassis is of similar size, with 2 in. deep runners. An aluminium chassis can be purchased ready shaped. Alternatively, a piece of aluminium 8½ in. by 10 in. can have two 2 in. runners bent on it. The chassis may also be constructed from wood — a piece of 3-ply 8½ in. by 6 in. for the top, and 2 in. strips of ¼ in. wood for the sides.

A metal chassis can be secured to the panel by means of the switch, reaction condenser, and tuning drive bush, as in Fig. 6. Bolt the two socket strips at the rear of the chassis. Clearance holes must be provided, so that the sockets do not touch the chassis.

Some 20 s.w.g. or similar wire can be used for connecting up, with insulated sleeving where required. Tinned copper wire will solder very readily, if a cored solder is used, and the iron is hot enough.

All wiring is shown in Fig. 6. Connections should be reasonably short and direct. The tuning condenser is mounted above the chassis, and lead X (from 1 on the coil holder) goes to the fixed plates of this condenser. With a metal framed condenser, one fixing bracket will form the frame and moving plates connection. Here, a bolt passes through the chassis, and forms a connecting point for the H.T. negative, and other leads shown in Fig. 6. If the condenser is an insulated type, take a short wire from its moving plates tag to this bolt.

With the 300pF reaction condenser, note that the moving plates are connected to the earth circuit, and the fixed plates to 3 on the coil holder. Grub screws hold the two control knobs to the spindles.

Lengths of coloured flex are used for battery leads. They may be equipped with suitable clips or plugs, or may be marked to identify them. Take care never to connect the batteries wrongly.

If a wooden chassis is used, this is merely to hold the components. But if a metal chassis is employed, this must be connected to earth. This will be done by the bolt used for the H.T. negative and other earth circuit wires, already mentioned.

COMPONENT LIST

100 pF fixed condenser, 4d.
5 megohm resistor, 3d.
B7G holder, 9d.
1¼ in. dia. knobs, 9d. each
30pF pre-set beehive, 10d.
Plugs, 3d. each
1S5 valve, 6/-
Cored solder, 6d.
Ready-made chassis (8 × 6 × 2½), 6/3d.
Above may be obtained from Alpha Radio Supply Co., 103 Leeds Terrace, Wintoun St., Leeds 7

150pF tuning condenser, 8/6d.
Switch, 2/-
Nylon Cord, 2d. ft.
Drive, 2/-
Coils, 2/6d. each
2-way sockets, 6d. each
Coloured flex, 2d. yd.
6B.A. nuts, 4d. doz.
300pF reaction condenser, 4/6d.
Drum (2½ in.), 1/8d.
Spring, 2d.
H.F. choke, 2/6d.
Holder for coil formers, 2/-
Sleeving, 3d. yd.
¼ in. 6B.A. bolts, 6d. doz.
Wire, 2/- to 2/8d. 2 oz. reel
Above may be obtained from Home Radio (Mitcham) Ltd, 197 London Road, Mitcham, Surrey

Using the receiver

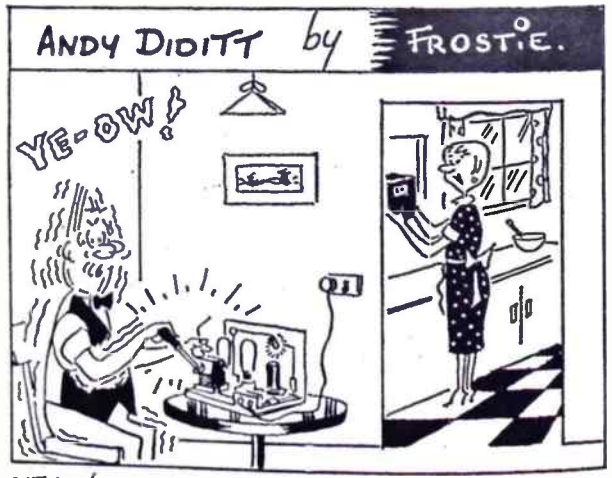
Insert valve and a coil, and plug in medium or high resistance phones. An earth will improve results, and it is taken to the socket marked E in Fig. 6. The socket A is for the aerial. An out-door wire, even if quite short, will give best results, especially if it is well clear of walls and earthed objects, and is reasonably high.

With batteries connected, and the set switched on, slowly close the reaction condenser until a rushing sound, or actual oscillation, is heard. The condenser should then be opened very slightly, and the control knob is adjusted, while tuning, to keep the receiver almost on the point of oscillation. In this condition, it is very sensitive to weak signals. If the reaction control is turned back too far, weak signals will not be heard. On the other hand, if this knob is turned too far, the set will oscillate, when tuned through a station, and reception will be poor. Some care is thus necessary, or distant stations will not be received.

If oscillation cannot be obtained on some wavelengths, the 30pF condenser is unscrewed slightly. This is most likely to be necessary with long aerials, or when tuning to very short wavelengths.

Transatlantic and other distant stations are most likely to be heard on the 19, 25, and 31 metre bands. Amateurs use 15, 20, 40, and 80 metre bands. Overseas amateurs are most likely to be heard on the 15m. or 20m. bands. Amateurs in the British Isles will be most easily heard on the 80m. band, especially at week-ends. Ships and other amateurs use wavelengths around 160m. The time of day has a great effect on the results obtained on the various bands.

A component list is given for the aid of constructors who wish to obtain parts by post. All the items listed may not be needed, in some cases. The cost can also be reduced by using surplus parts, instead of the new components listed. The prices given are as a guide, and may be expected to vary slightly. The necessary items can, of course, be obtained from many other postal supply stores.



"IT ISN'T THE SET AFTER ALL, ANDY — IT ONLY WANTED A SHILLING IN THE METER."

MAINLY for MODELLERS

WOODEN SHIP BUILDING—16

By 'Whipstaff'

IN the design of the ships of the late eighteenth century we were again dependent on much we learned from the foreign ships, mainly captured prizes, particularly French. Although not actually copied, the ideas taken from the designs of captured ships were adapted and followed out in our own way.

One of the types introduced to the Navy in this way was the heavy frigate. This carried 24-pounder guns instead of our usual 18-pounders, thus starting a new class or type starting from forty guns to vessels of 1,500 tons and carrying sixty guns.

At this period while there was no radical change in the shape of the ships below the waterline there were marked differences in the design of the upper works.

In the *Victory* we have a good example of one of the changes in design. This was the introduction of the closed stern in place of the open stern galleries. The introduction of the round bow also enabled more armament to be used on either bow.

Although during the closing days of the eighteenth century solid bulwarks were introduced on the French men-of-war, it was some while before the British replaced the open timber heads along the forecastle, quarter deck and poop with solid bulwarks; new three-deckers built at the turn of the century were fitted with bulwarks which then became the general practice.

At the beginning of the new century a stronger method of building warships was introduced by Sir Robert Seppings to overcome the effect of 'hogging' in wooden ships. This hogging involved the dropping of the bow and stern out of true and became more of a problem as the length of warships increased. The improved method of hull construction was the use of diagonal ties or struts. This, together with the previous introduction of round bows and sterns and the use of bent iron for knees etc, made a ship of stronger construction, although somewhat slower in speed.

The size of the ships was still increasing and the first of the larger 120-gun vessels was modelled on the captured French warship *Commerce de Marseille*.

In like manner the war of 1812 with the United States forced upon us the knowledge that our frigates, comparable to our modern cruisers in their uses, were no match for their American counterparts, our opponents having some of unusual size and armament. We thus had to design an improved class of frigate.

In improving the design for the hull Sir Robert Seppings had the spaces between the timbers (or ribs) filled in solid with timber, instead of the previous method of transverse ribs, with spaces between, thus presenting a solid mass of timber in the lower hull to resist the 'working' of the timbers in use at sea.

Also at this time he introduced shelf pieces and waterways, the purpose of these being to give additional strength to the beams. The shelf pieces ran fore and aft below the knees and the waterways fore and aft above the beams.

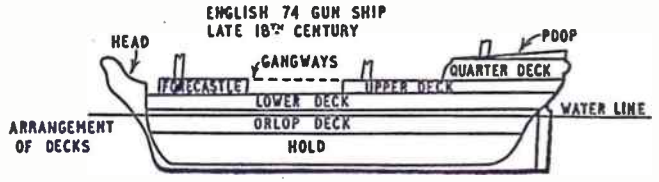
The late seventeenth century saw the ships with a very bluff entry, double wales, less rake than the types of the Stuart period, beakhead bulkhead one deck deep, curved and shortened beak.

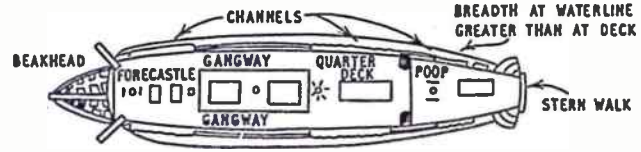
By the middle of the eighteenth century, while the entry was still very bluff, the beakhead has become very short. The wales were joined and no longer double in pairs, and projecting stern walks aft were still a feature. Channels had been raised to quarter-deck level, the mizzen channels to poop deck level.

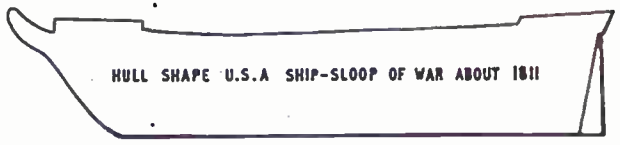
At the end of the century the wales were less prominent. Planking was thicker and on most ships the elaborate open sterns had been replaced with the closed stern, although the 'head' of the ship had changed little in shape.

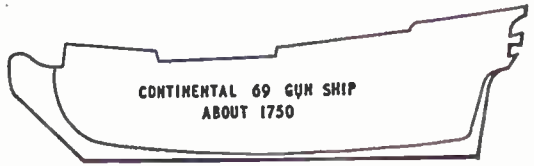
During this period as noted earlier, the main fighting ships were the seventy-four-gun vessels and the sketches give some idea of the layout of this type of ship, hull shape, decks and layout of upper decks.

Other sketches show some of the difference between English built hulls and those of the French and American Navies.





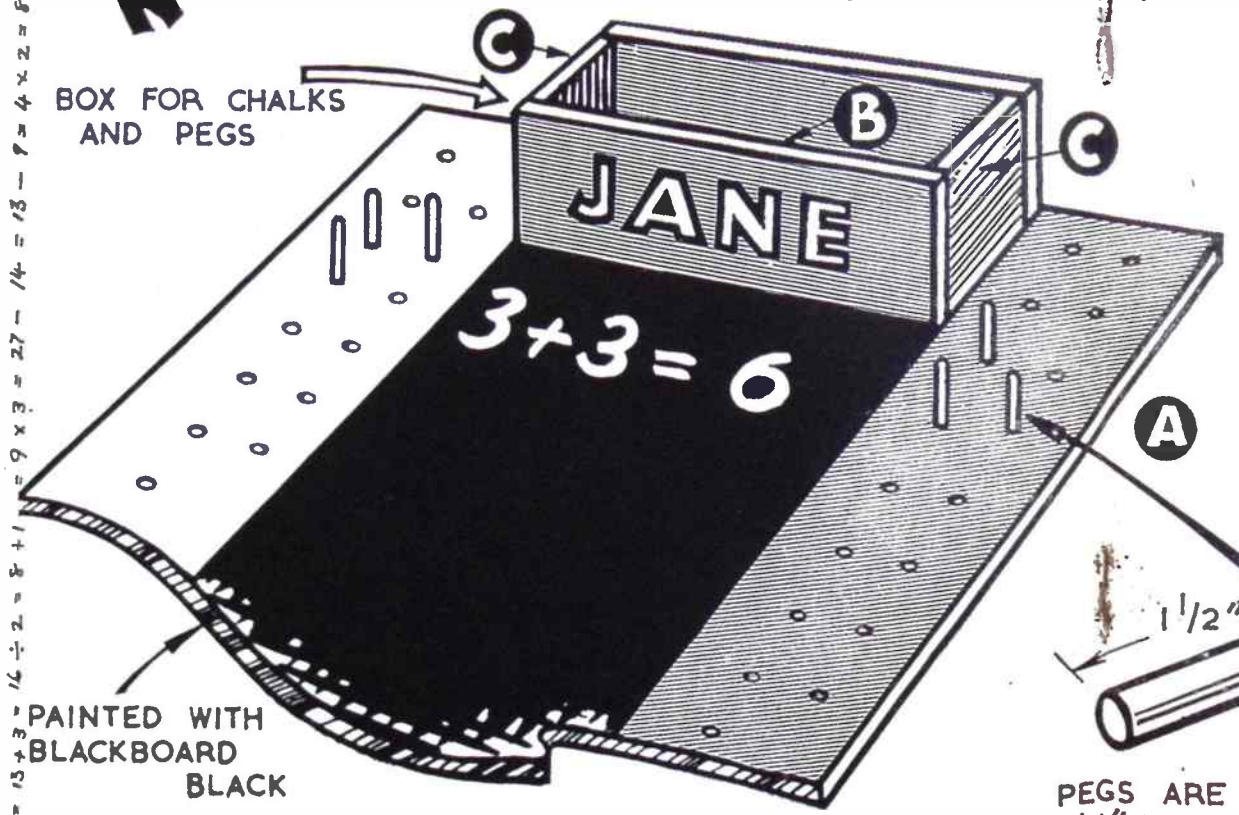


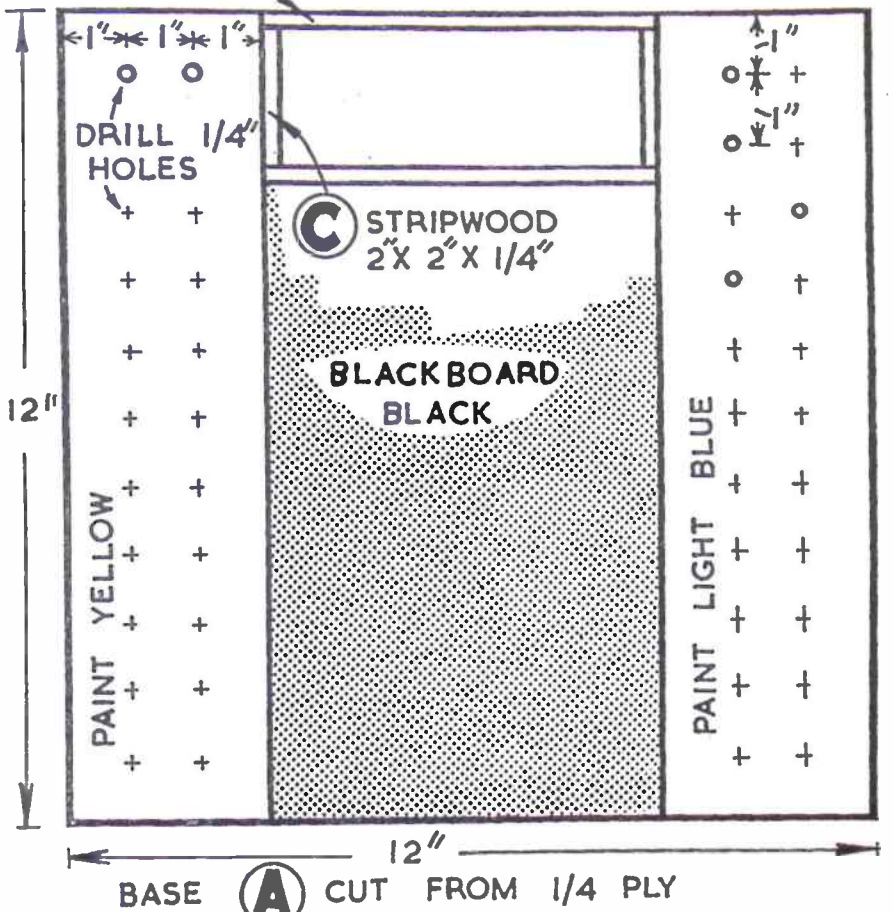


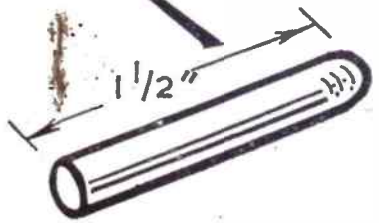
IT'S EDUCATIONAL!

A Novel SUM BOARD

MADE IN AN EVENING FOR ONLY A FEW BOB







PEGS ARE CUT FROM 1/4" ROUND ROD CUT 24 PAINT BRIGHT RED

+

IT ALL ADDS UP TO LIGHT HEARTED LESSONS

Hand-Made JEWELLERY

HAVING completed all soldering on the ring, and pickled it to remove the dark oxides, next file the bottom of the under-bezel to complete the curve of the shank.

FINISHING THE SOLITAIRE

By Peter Wix

Now you must follow the polishing routine exactly as described for completion of the first project in this series of articles. If you use a power-driven mop, you will find that a little metal is removed from the tips of the claws. This is why all but the final light buffing is done at this stage. You must also be very careful not to catch a claw on the spinning mop.

The setting, as supplied, has an inside diameter slightly smaller than the stone. This is to allow for cutting the shoulders in the claws, which act as a bearing and support the stone, preventing it in the setting process from being forced downwards like an ice-cream in a cone.

Start by filing the end pairs of claws. Fig. 1 shows an end claw. The depth of the cut is to just below the level of the ring shoulder, with rather less than half the thickness of the claw cut away. You can use a slim barette file. Starting with the two end claws, bend the two adjacent claws slightly inwards until you have room to work. To file the other claws, bend them slightly outwards, one at a time, returning each one, as completed, to its original position. They will not break if you avoid sharp bends.

Next try the stone for a good fit. There should be no gaps between the stone and any of the claws, and a sufficient length of claw to hold the stone securely when bent and burnished onto it. File off the squareness from the end of each claw, aiming at a tapering but rounded point. Remove metal only from the outside. Above all, avoid weakening the claws by making them too thin: the action of burnishing will thin them even more.

Temporary setting

The stone can be held in position for setting by warming ring and stone in the hot air from your spirit lamp, then holding the ring upside-down on the bench and letting some melted sealing-wax or stone-setter's shellac half-fill the inside of the setting. Any of this cement that gets in the way can be chipped from around the claws with the point of a pen-knife. With a small piece of hardwood press one of the claws half way on to the stone. Do the same with the claw immediately opposite, and carry on in this way until all the claws are half way to being set. Then repeat the process, this time pressing each one firmly on to the stone. Now go over them all again, using the small end of the burnisher described in the first article.

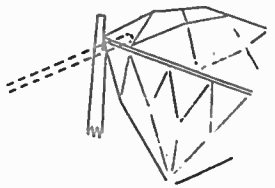


Fig. 1—Filing an end claw

You must still work in pairs as before, pressing the claws down with a slow rubbing motion, and avoid tightening any one claw excessively. It is a business that cannot be hurried, and if claws are brought down very gradually no stones will be broken. You may have to go round the setting five or six times. The final tightening is done on the very tip of each claw. Hold the burnisher very near the point for this, and avoid any sudden slip off the claw, for the steel may strike the stone with considerable force.

Rub a finger over the stone when setting is complete, and give any sharp or rough places a careful rubbing with the burnisher. Avoid using any abrasive on the claws. With the exception of diamonds, most stones are quite easily scratched.

Assuming that there have been no bad slips with the point of the burnisher, your ring needs only a good polish with rouge (this will not hurt the stone), a prolonged soaking in methylated spirits to remove the shellac or sealing wax, and a final brushing in hot detergent or washing soda.

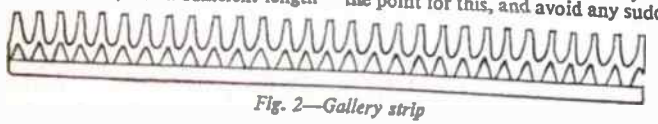


Fig. 2—Gallery strip

Settings from gallery strip

Larger settings, suitable for rings, earrings or brooches, where the stone is of any shape other than square or rectangular, can be very attractive if made from gallery strip. This can be bought in silver, gold, or even platinum, in a variety of styles and in sizes varying from 3 mm. to 9 mm. in width. Fig. 2 shows a typical style. It is ordered by length. There is a fashion charge of between 2s. 9d. and 4s. 6d. per foot according to the pattern. The weight of metal is charged in each case. Thus, a strip 12 in. long of the pattern illustrated, 7 mm. wide, costs 4s. 6d. plus the weight of metal. In silver this makes the total cost about 6s. 6d. per foot.

The opening of a setting made from gallery should always be larger at the top than the bottom, the angle being far more pronounced in a ring than in the case of a larger brooch. The setting is made smaller than required and afterwards opened out to take the stone.

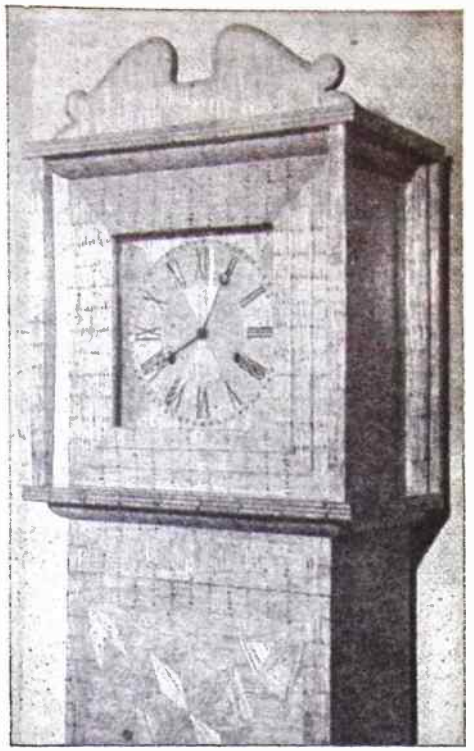
Begin by annealing the length of gallery. Bend one end of it round the stone, then make it smaller, until you judge that, when soldered up as a setting and opened to a conical shape to fit the stone, its sides will then slope at the desired angle. You have to foresee the result; there is no rule or formula.

Cut the strip with the saw, file the ends true and solder them neatly. The join must be mid-way between two claws, and these claws must be the same distance

● Continued on page 59

He makes the most of Matches

By R. J. Symes



IT was 24 years ago when Mr Vine of New Street, Weymouth, decided to have a go at making something with a handful of matches. Little did he realize how many pleasant hours he was to spend in perfecting his hobby. Not only are his articles decorative and artistic, they are also quite practical.

It appears his most proud exhibit is the 100 year old grandfather clock he rehoused in a case, which took the colossal number of 140,165 matches to complete. This took him over a year to make and required a true to scale drawing from which to work.

When asked how he could possibly know how many matches he used, he replied, 'All my matches are kept in bundles of a hundred before I start, which enables me to keep quite an accurate number of the total I use.'

Looking around his sitting room I espied not only two more clocks, but also a draught board table complete with matchstick draughts and box, two fireside ash tray stands, a tea tray, firescreen, book ends and tobacco jar, all made from used matches.

Then there's the walking sticks, and the visitor invariably remarks they are hollow or ordinary sticks veneered. Mr Vine replies that all five sticks he has made are genuine 'match' sticks, and he will even break one in two for a fiver to prove he's right. So far no one has taken him on!

It was a walking stick that Mr Vine first 'tried his hand' at. And it's one of his gestures to present one of these to any one of his workmates who retires from the Weymouth Corporation, where he is employed as a carpenter.

His method of construction is to lay the matches on to a paper template (even the burnt ends can form interesting line work) and secure them with glue, planing the paper off afterwards.

There is usually a pattern inlaid in his work, and each layer is laminated to add strength to the article and prevent warping. All surfaces are planed and glasspapered and then finally given a coat of knotting or shellac.

Of course without the support of his friends he wouldn't be able to continue his hobby, through lack of raw materials! He has become used to hearing boxes of matches being quietly dropped through his letter box, and in the past he has had anonymous deliveries through the post.

Certainly one requirement is plenty of patience, as well as matches. If there are drawbacks it might be the messy glue and occasional sore thumbs and fingers. But this doesn't deter him for he's now absorbed in another major construction — a full-size drop leaf table.

● Continued from page 58

FINISHING A SOLITAIRE RING

apart as the others. Now force the setting into its conical shape, but leave it just too small to take the stone. File a shoulder on each claw, just as described for the ring. Not until this has been done should the stone fit easily in place. To stretch a small round setting you can simply force it onto a tapered mandrel or one jaw of a pair of round-nosed pliers of suitable size. For larger settings of unusual shape, careful easing with the pliers, working round and round a little at a time, will produce the same result.

It is sometimes quite easy to judge the depth of the shoulders to be cut in the setting before you start making it up. You can save time here by first bending the gallery strip to find the length required, cutting it, bending it straight again, and cutting all the shoulders with a file to a line scribed straight across the inside of the claws. Then bend it back to shape, solder the join, and open it out to take the stone.

Stone setting is done in exactly the same way as already described. With large settings it is quite simple to hold the stone with your fingers while securing the first few claws and so dispense with the shellac or sealing-wax.

In the case of a brooch, a small plate soldered at each end can carry the joint and catch. For pendants or pendant earrings, a small jump ring needs to be soldered to the top of the setting.

ALL-PURPOSE EPOXY GLUE

'ONE drop will hold 2 tons' claim the manufacturers. Though not tested to this extent, Devcon '2-Ton' epoxy glue certainly proved its adhesive qualities on metal to metal, wood to wood, and combinations of these and various other materials. Chips in a porcelain sink were also repaired with complete satisfaction as it dried rock hard with a white shiny finish — matching the porcelain nearly exactly.

Sold in two tubes (one is the hardener) for 8s. 6d., it is comparatively too dear for use solely on woodwork joints, but considering its versatility, and universal application, '2-Ton' is very handy to have about the house for jobs that include bonding, sealing, and repairing.

RELIEF WALL DECORATIONS

WHEN decorating a room it is modern practice to add finishing touches by means of bordering, dividing a scheme into panels or ornamenting in some way at the corners. and this is often essential when different papers have been used to make panels.

A new idea is to make original, relief ornaments from half round beading and linoleum suitably prepared. The motifs can be designed to suit your own particular requirements and coloured to match your decorating schemes. They are fitted to the wall, approximately 1 ft. from the corners and similarly from the ceiling, although this measurement can be modified as desired. If you wish to add a centre piece between the corners this can be prepared in a T form and made to conform with the other pieces.

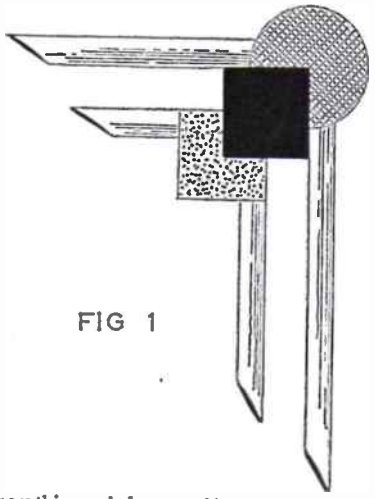


FIG 1

You will find it an advantage to use new linoleum and since it is now possible to buy small squares very cheaply, one or two will do the job at very little cost. You may either select a suitable colour for this part of the ornament or paint to any shade, gold or silver. The linoleum can then be easily cut into squares, oblongs, diamonds, discs or any shape you desire by means of a sharp knife or scissors and the size will be determined by your design. Two inch squares may be large enough if used in pairs although single ones look better if a little larger, but whatever size is decided remember to plan for economical cutting of the linoleum squares.

Reference to Fig. 1 will show that two squares and a disc are fitted together to form the central motif. Two squares of equal size are cut out together with a disc and these are then prepared to fit together by removing a portion of a square and a segment of the disc, permitting different colours to be used for the three pieces involved. It will be seen that it is best to prepare several such pieces before fixing to the wall but at the start it is wise to first cut out pieces of cardbord to size, arranging them in various groupings along with strips of beading to help in deciding the best scheme. The squares may then be cut out and the joints prepared ready for fitting.

Use half round beading, either ½ in. or ¾ in., the larger being more suitable for rooms of bigger dimensions and where the central features are also on a larger scale. Once again the length of the beading must be left to your discretion but as a guide we would mention that the verticals should not be less than 12 in. and slightly longer than the horizontals. In all cases the bottom ends should be neatly mitred inwards for a good finish.

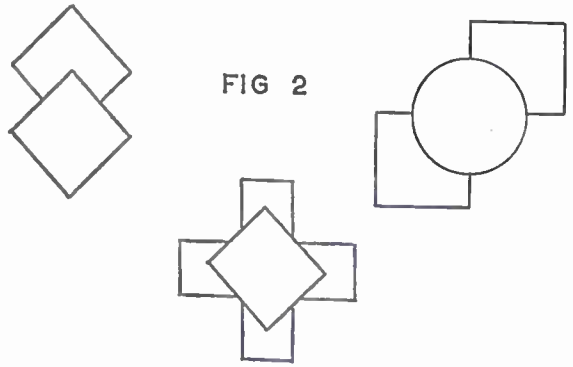


FIG 2

When the length has been decided the beadings can be painted as required and you will find it an advantage to lay a few strips together on a sheet of old newspaper. These may then be painted in one operation and laid aside until dry.

Apart from normal painting methods it is possible to apply a textured surface to the beading when two colours may be used for finishing and these may match the central features. All you have to do is to prepare a mixture of crack filler to a reasonably thick consistency which is then painted on to the beading with a brush. This filler is then stippled with a stiff brush, a comb or by applying a flat piece of wood while the material is still plastic. This action will make a texture or raise the surface by suction.

Allow to dry, rub over with coarse glasspaper to remove loose particles and sharp points, then paint.

Since this material is rather absorbent two or three undercoats of paint may be required. The beading may be left in one colour at this stage, although textured, but if two colours are required a tinted glaze is brushed on and then wiped away from the high relief parts with a rag. This will leave the tinted glaze in the depressions of the textured surface with the high relief portions revealing the ground colour and producing a two-tone effect. It is possible to produce an infinite variety of textures by use of these simple methods.

When the preparation of the ornaments has been completed they can be attached to the walls by dextrine — a strong paste used for heavy wallpapers — fixing the central features first and ensuring they are level by using a cord stretched along the wall after careful measuring. If necessary the beading can be attached with one or two fine panel pins.

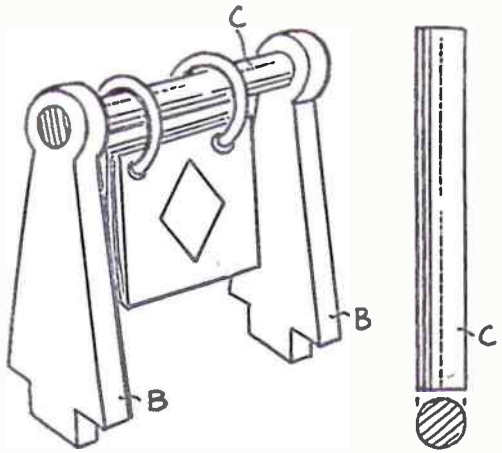
In Fig. 2 we show several other modifications for designing the centre pieces but these are all geometrical shapes. It is possible to cut out other shapes such as leaves or flowers for floral effects, colouring accordingly, while animal shapes may be more appropriate for children's rooms — or you may be able to design some nursery rhyme characters.

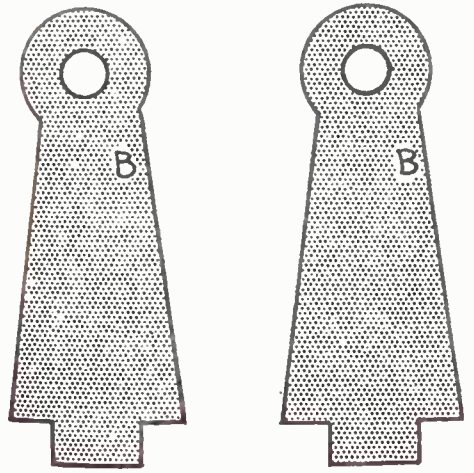
With a little care in the fitting you should be able to make many attractive and original relief ornaments to suit any form of decoration. (S.H.L.)

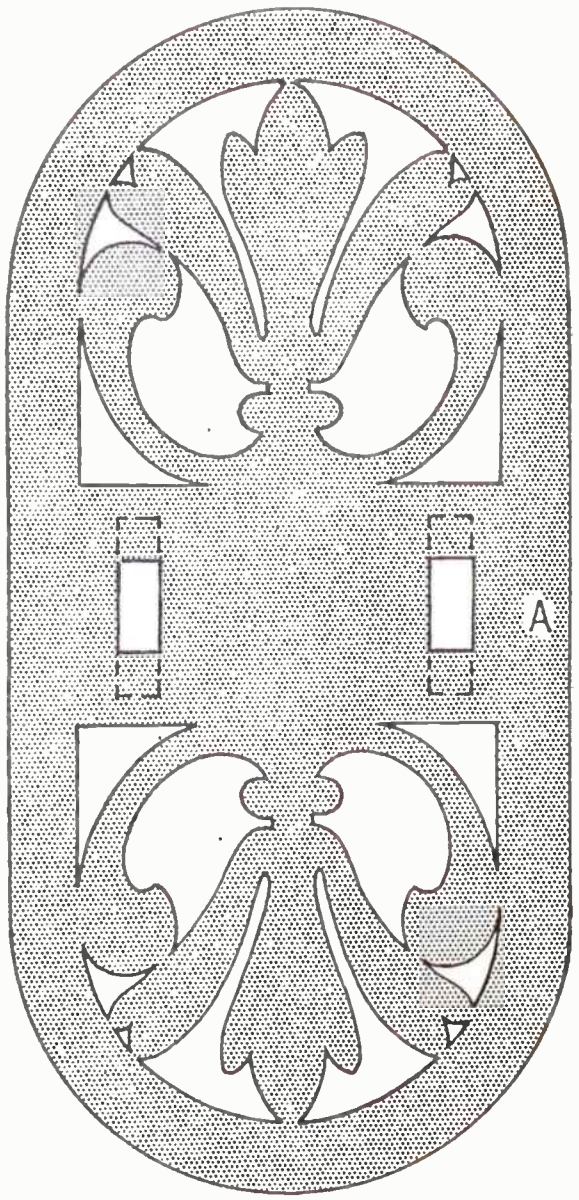
Next week's free design will show how to make a Christmas toy for a youngster — 'The Nursery Express'. Make sure of your copy.

A TRUMP INDICATOR

CUT pieces A and B from ½ in. wood with a fretsaw. Piece C is a length of ¼ in. round rod which is glued into the holes in pieces B as shown in the sketch. The rings of the trump indicator are slipped over C as it is being assembled. Glue pieces B into the slots in the base A. Finish by painting or staining and varnishing. Trump indicators may be obtained from Hobbies Ltd, Dereham, Norfolk, price 1s. 6d. postage 4½d. (M.p).







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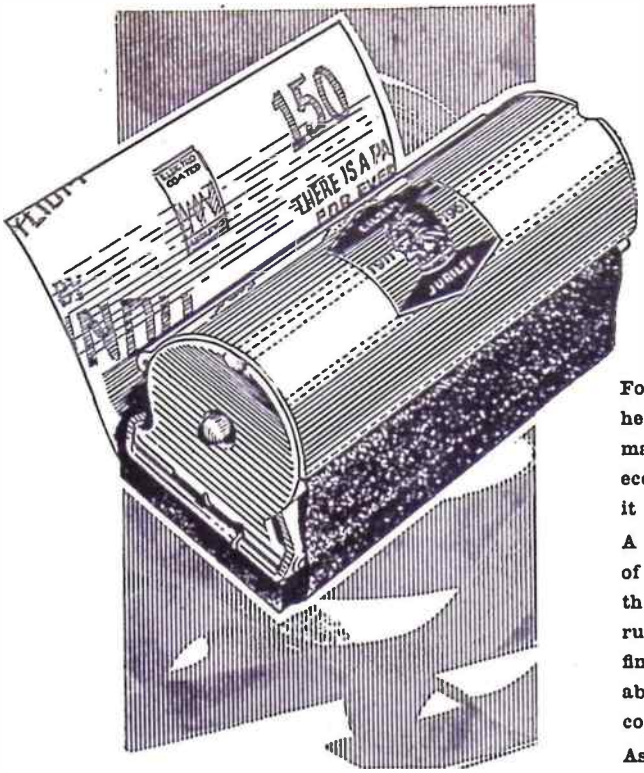
READER'S REPLY HW OCT. 1961

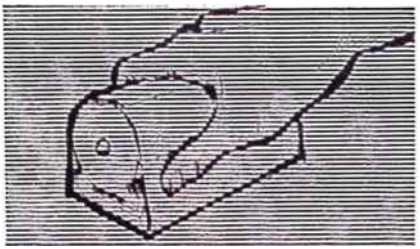


For the professional or amateur handyman here is a device that was really needed. It makes sand papering easier, quicker, more economical and gives a better result too—it uses all the abrasive paper uniformly.

A steel cylindrical container holds a roll of abrasive paper which is withdrawn through a slot and folds round the resilient rubber base where it is firmly held by fingers and thumb—the rubber base enables the abrasive to make a better all-over contact.

As each portion is used to the limit, the roll is pulled out just the width of the base again—no waste in time or material.

the new SLIK sander



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From Ironmongers, Hardware and Do-it-Yourself Shops.

THE
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TRAFFORD PARK MANCHESTER 17

THE Cretan civilization that existed over a period of three thousand years paved the way for European civilization. While it preceded the latter by many centuries it was actually the source of the ideals of universal and human co-operation.

MINOAN ART FROM GREECE

Already in 3000 B.C. there was prosperity and a flourishing organization on the island. From 1500 B.C. the seat of this civilization moved to Greece where were the great centres of civilization, Minoan Crete and Mycenae. The newcomers poured fresh blood into those civilizations and soon evolved that notable civilization which was Ancient Greece.

The set of stamps now released bears some characteristic examples of Minoan art. The vases are decorated with a wondrous combination of many colours and the harmonious designs of the Kamares period. No other civilization has produced vases of similar quality. The vases inspired by the naturalistic tendency of the 2nd millenium came out a little later. Plants, flowers and seaweed delight and fill us with the joy of nature. It is decorative art enlivened by the breath of nature.

But the real glory of Cretan art is seen in the wall-paintings of the palaces and mansions — vivid, bright colours, inspired and daring designs, themes representing all aspects of life and nature. Garden and wild flowers are depicted as well as animals, sea-animals and birds.

Religious and other rites are illustrated in the most vivid colours. The presence of women in all social gatherings is also characteristic of Minoan Crete which was ahead of other civilizations in that respect too.

Such was Minoan art, examples of which are illustrated in the present set of stamps seen below on the left.

* * *

ECUADOR

WE have just received two Ecuadorian covers depicting animals and lepidoptera.

SWITZERLAND

In replacement of the 3, 5, and 10fr. stamps of the 'Symbolic Motifs' set 1938, three equivalent stamps were issued on 18th September, plus a new 20fr. value mainly intended for the prepayment of postage on airmail items and parcels for abroad. The stamps show the four Evangelists with their attributes, drawn after fifteenth century woodcarvings from St. Oswald's church in Zug, which are now the property of the Swiss National Museum in Zurich.

* * *

FIJI

The first of the new designs from Fiji, the 8d. value, was released on 1st August. It depicts the exotic hibiscus flower, accepted today as symbolic of the beautiful South Sea Islands.

* * *

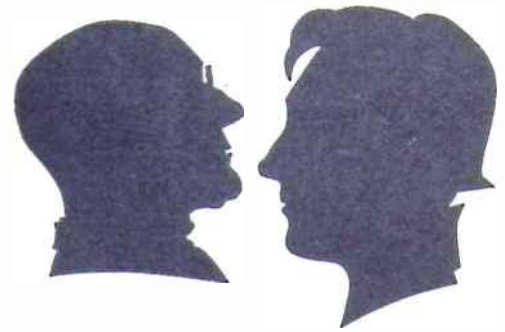
SWEDEN

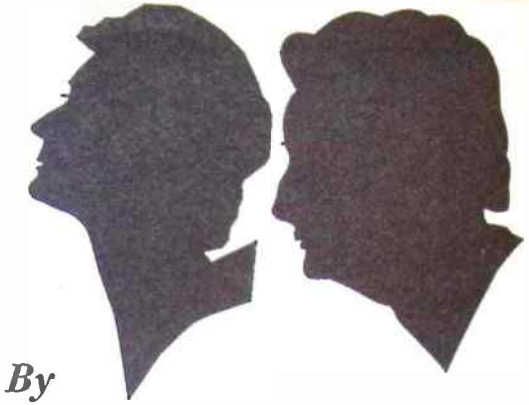
Two new stamps appeared on 22nd September, in commemoration of the 300-year jubilee of the regulation, prescribing that copies of Swedish printed works should be handed over to the Royal Library.

FROM NETHERLANDS NEW GUINEA

A series of charity stamps from Netherlands New Guinea was released on 15th September and includes four values, each stamp depicting an indigenous weevil, together with its host-plant, in their natural colours

How to make a Silhouettograph



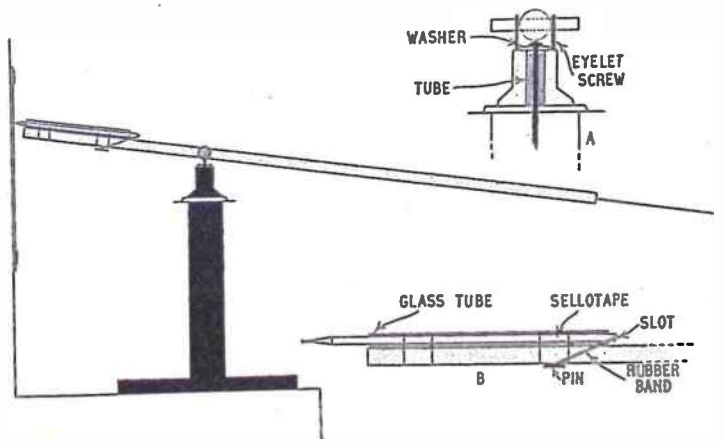


By A. E. Ward

THE jet black profile portraits called silhouettes were named after their originator, an eighteenth century French government official, who earned fame through bringing about drastic savings in the public expenditure of his country. It has been slyly suggested that Silhouette devised the method in order to save the expense of having likenesses painted by professionals.

The vogue for silhouette cutting continued into the nineteenth century, and became a popular folk art which survives today as an absorbing children's pastime. Unfortunately everybody is not gifted with the skill needed to produce recognizable outlines, so, perhaps, many adults are reluctant to pursue the art as a hobby. If you are not greatly talented artistically, but would find pleasure in making acceptable pictures of your friends, why not cheat a little, and make a silhouette machine, or 'silhouettograph'.

The machine is based upon the principle whereby levers can transmit movements accurately, and alter the magnitude of motions. Build the base of the apparatus by firmly attaching a wooden pillar measuring 1½ in. by 1½ in. by 10 in. to a baseboard measuring ½ in. by 8 in. by 8 in., using long screws. Saw off one end of a small cotton bobbin to obtain an object which will form the basis of a two-way swivel mounting for the lever. (See diagram A.)



Use a long screw to secure the cotton reel to the top of the pillar. The screw should first be fitted with a small washer, as illustrated, and it will be advisable to insert a little glass or metal tube into the wide hole in the wood, in order to ensure that the screw fits snugly, but not too tightly. A coffee tin lid will serve as a convenient large washer to interpose between the swivel and the upper part of the pillar.

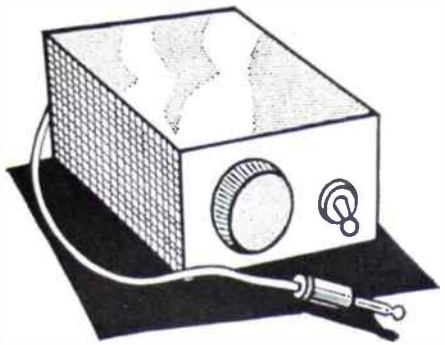
Fit a pair of eyelet screws, well spaced apart, into the top of the rotatable lever mounting. The apertures of the eyelets should be just sufficient to receive a length of ¼ in. dowel (or a piece of penholder) reasonably tightly. Obtain a 1 yd. length of ¼ in. dowel, and bore a neat ¼ in. diameter hole clean across the middle from a point 10 in. or 12 in. from one end. Employ a 1½ in. long rod of ¼ in. dowel as a tight spindle to hold the lever firmly between the metal eyelets. It should now be possible to swing around the lever like a telescope upon its stand. Take care to avoid any loose fittings which might cause wobbling.

Diagram B illustrates the 'stylus' of the machine, and the assembly consists of a 5 in. long glass or metal tube bound to the 'short' arm of the lever with Sellotape, and of adequate internal diameter to permit free movement of a pencil to and fro within it. Tension must be applied to the blunt end of the pencil, and this is achieved by means of a small rubber band looped around a drawing pin below the level of the tube, and pressing into a slot which is cut into the pencil.

Using the machine

These details may be easily recognized in the diagram. It now remains for you to insert a steel knitting needle securely into the end of the 'long' arm of the lever. A hole may be bored into the wood, using a red hot nail barely less in diameter than the steel rod.

● Continued on page 101



1-Transistor Tape Recorder Feeder

By

'Radio Mech'.

A GOOD deal of interest can be obtained by recording programmes from the radio, and the feeder described here is intended for this purpose. It is, of course, possible to make recordings of radio programmes by placing the tape recorder microphone near the radio receiver loudspeaker. This is very straightforward, but has the disadvantage that some distortion is introduced by the loudspeaker, and microphone.

To avoid this difficulty, a tuning unit can be employed to feed the tape recorder direct, without any loudspeaker or microphone being in circuit. Recordings of very good quality are obtainable in this way.

The feeder unit described here has a single transistor, and this will give enough output in very many parts of the country. The feeder is not intended for reception of overseas or very distant stations, but can easily provide a strong enough signal from local stations.

The circuit is shown in Fig. 1, and is intended for an OC71 transistor. Other kinds of audio frequency transistors will work instead, and can be used if to hand. A small dry battery of 3V. to 9V. provides current, and will have a very long life. The voltage is not important, and 3V. or 4·5V. may easily give enough volume in some localities. More than 9V. should not be used.

Any ordinary medium wave tuning coil is satisfactory. A coil can be wound with 32 s.w.g. enamelled wire, on a 1 in. diameter former, if preferred. Referring to Fig. 1, 40 turns of the wire are wound on, side by side, between points 1 and 2. A space of about ⅛ in. is then left, and 75 turns are wound on, also side by side, between points 3 and 4. The wire ends can be left long enough to reach the various components.

Assembly

The diode should be of good quality, either new, or tested. The resistor values should be reasonably near those given. The condenser values are, however, much less critical. In the 5μF position, anything from 2μF to 8μF may be used. The 50μF condenser could equally well be 25μF or 100μF. Both these condensers are low voltage, miniature transistor type components. The 0·1μF condenser is a normal paper type, of about 150V. to 250V. or so rating.

All the parts are mounted on a small insulated baseboard, as shown in Fig. 2. A small panel holds the switch, and ·0005μF tuning condenser. At the other end of the baseboard, a twin socket strip is screwed.

The coil tags in Fig. 2 are numbered to agree with Fig. 1. If a ready made coil is used, the tags may be in different positions. If so, simply connect the tuned winding (3 and 4) to the tuning condenser, and the aerial coupling winding (1 and 2) to aerial and earth circuits.

Small transistor type condensers usually have a rim near the positive end, as shown, or the condenser will bear positive and negative markings. Wire these items as in Fig. 2. The 0·1μF condenser, and all resistors, may be wired in either way round.

In the diagrams, C shows the transistor Collector, B the Base, and E the Emitter wires. With the OC71 transistor, a red dot marks the Collector, as in Fig. 2. Leave the wires their full length, and make the soldered joints quickly, with a really hot iron, so that the transistor itself is not heated. It should not be necessary to keep the iron in contact with the joint for longer than a second or so. Cored solder is most convenient for all joints, and it is applied to the joint at the same time as the heated iron.

Lengthy heating of the other components should also be avoided, especially when wiring in the diode.

The screened lead is best kept reasonably short, and reaches from the feeder to the tape recorder. The correct type of jack plug should be obtained, so that this can be inserted in the microphone or radio tuner socket of the recorder. The centre, insulated lead in the screened cable passes to the tip of the jack plug, while the woven metal braiding forms the stem, or outer, connection. At the feeder end, the lead is held by a small clip, as shown. The braiding is pulled to one side for 1 in. or so, and the strands twisted together, and soldered to a lead going to the earth circuit. The inner, insulated lead is connected to the 0·1μF condenser.

The battery may be a miniature transistor receiver type, or a torch or flashlamp battery can be used. The battery leads must be joined up in the correct polarity. Receiver batteries have the polarity marked on them. Flashlamp batteries are not usually marked in this way, but the zinc case is negative.

The battery voltage can be chosen to suit the volume required, as mentioned. There is no point in using a 9V. battery if a 4·5V. or 3V. battery will suffice, because this is likely to increase background noise. A clip is cut to hold the battery in place.

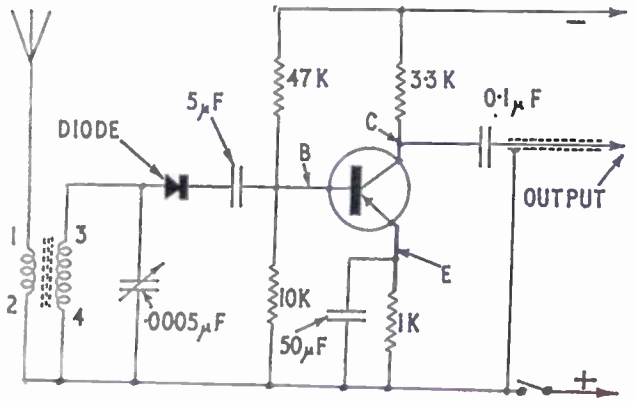


Fig. 1 Feeder Circuit

Using the feeder

If the recorder has a socket marked for use with a radio tuner, this will probably prove best. If there are alternative microphone input sockets, try these to find which is most satisfactory.

If the recorder has a switch giving 'straight through' operation, the radio programme can be checked by listening with the recorder loudspeaker. This also allows tuning to be adjusted. If there is no provision for working in this way, the best solution is to listen to the signal obtained, by connecting phones across the jack plug.

When the station is correctly tuned in, the recording level is adjusted by means of the tape recorder volume control, exactly as when recording from a microphone. Some recorders are so made that the signal can be heard on the loudspeaker, while being recorded, and this is a convenient method.

In most cases no earth will be necessary. If one is available, it can be taken to the E socket of the feeder. An earth may be worthwhile in some localities, to reduce interference, or improve signal strength.

An aerial is required, but the type of aerial necessary will depend on the strength of the local station, and the sensitivity of the recorder. In many areas, a simple or temporary indoor aerial will be sufficient. Elsewhere, an outdoor aerial may be needed. An elaborate aerial is not likely to prove necessary, so the wire can be of any reasonable length, supported by two or three insulators.

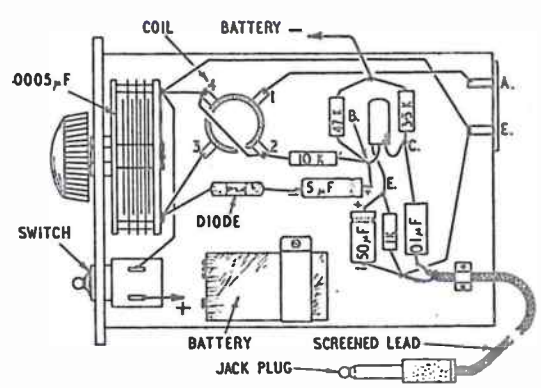


Fig. 2—Parts and Wiring Plan

Use as receiver

The feeder can be used as a 1-transistor receiver, and can give very good headphone reception. If the unit is to be employed for this purpose only, omit the 3·3K resistor, 0·1μF condenser, and screened lead and jack plug. The phones are then connected from the transistor collector C to battery negative. Two terminals or sockets can be provided for this purpose.

If the feeder is normally used with a tape recorder, but is occasionally used for headphone listening, simply connect the phones to the tip, and stem of the jack plug. This is most readily done by connecting the phones to a spare socket, into which the plug is inserted. It is then possible to remove or connect the phones at once.

A small case to take the feeder can be made from thin wood. Clearance holes for the jack plug and lead, and aerial and earth socket plugs, should be provided. The completed unit can then be inserted in the case from the front.

● Continued from page 99

A SILHOUETTOGRAPH

Stand a small table against a wall, and clamp the base of the apparatus to the table top, in such a manner that the pencil point only projects about a ¼ in. beyond the end of the glass tube, and is pressing up against the wall when the lever is horizontal. Take care to protect your wall from scribble marks. Next you must secure a sheet of drawing paper to the wall, so that its middle is roughly in line with the stylus tip. Perhaps you will be able to improvise an arrangement in which the paper is pinned to a vertically held board. Such a board should be hard, to prevent the pencil jabbing into the paper. A house brick will serve very well to keep the apparatus steady if you lack a clamp. Let your first volunteer sit in a chair with one side of his face towards the machine. Adjust the sitter's position until the steel rod 'tracer' is pressing lightly against his throat.

It will be advantageous if you can squeeze yourself between the table and your friend before you begin drawing. Gently and steadily move the steel tracer over your subject's throat, chin, mouth, nose, and forehead. When you reach the hair, merely trace the general outline. Try and include some detail of the clothes your sitter is wearing. Soon you will learn to operate the machine quickly and accurately. The little profile traced by the stylus will be inverted, and may lack certain minute but vital parts. Remove the paper, and place it against a sheet of black paper. Ask your friend to pose, sideways on, while you cut out the profile and refer to your friend's features to help you improve any part of the outline not satisfactorily sketched by the machine. Finish off the portrait gracefully at the base of the neck.

Mount the completed picture tastefully upon a white background, adding the name of the person represented, and the date. With some thought and practice, you will be able to mount white silhouettes upon black cardboard and to vary the shapes of your backgrounds. Try a broad elliptical setting Many variations are possible, including the use of coloured materials. When you have acquired facility in this art, you will wish to compile a gallery of portraits illustrating all your friends and members of the family. An album compiled in this manner would be a treasured possession in years to come.

It is surprising how expressive the portraits can be. The minutest exaggeration of a single feature, or whether you cut the hair in deep or shallow curves, will prove subtle devices for infusing some genuine character into your cut paper studies. When mounting the pictures, a slight upward or downward tilt of the profile can improve the general effect. Youthful and more elderly persons will be seen to have characteristic outlines which betray the ages of the sitters.

As a 'side-show' attraction at a fete or bazaar, a silhouette cutter will do good trade.

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★ How to make a cart trailer for a ★
★ bicycle will be described in next ★
★ week's issue, together with other ★
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CHEMISTRY AT HOME

RECIPES FOR HOBBIES AND IN THE HOME

By L. A. Fantozzi

THE upkeep of wooden sheds is expensive if paint is used. Where a black finish is not objected to tar is well worth consideration, as it is so cheaply obtained at the gas works. Normally, it is heated and applied warm. As a protective coating it can be much improved by the incorporation of ¼ lb. of tallow and 1½ pints of kerosene to a gallon.

Choose a dry spell for the job. Heat up the tar over a small outdoor fire and when nicely thinned stir in the tallow. Lift the vessel from the fire and stir in the kerosene. The preparation is equally good for reproofing a felted roof but after application scatter dry sand over the coating.

The tar brush may be cleaned with kerosene. A further tip is that if a brush has hardened with old tar, creosote is the best medium for softening it again. Simply stand the brush in creosote and when thoroughly soft remove it and rinse in kerosene.

CASTING COMPOSITION

A composition which gives a good hard cast and is superior to plaster of Paris may be made from zinc oxide and zinc chloride. The zinc oxide should first be heated strongly, cooled and at once temporarily stored in a well-closed bottle until required. The zinc oxide should be mixed with half its volume of a 55 per cent weight in volume solution of zinc chloride, taking care to eliminate any air bubbles. When the mass begins to thicken pour into the mould and leave until hard. A coloured composition may be obtained by previously mixing ferric oxide (for red), manganese dioxide (for black) or chromium sesquioxide (for green) with the zinc oxide.

TOOTH POWDER

An old fashioned tooth powder which is gentle but efficient and antiseptic may be made from camphor and precipitated chalk. One part of camphor and eight of chalk are needed, both by weight. First moisten the camphor with a few drops of ethyl alcohol or iso-propyl alcohol and then powder it. Let the alcohol dry off and then grind the powdered camphor with the chalk. Pass the powder through a coffee strainer and regrind any residue in the strainer, again sieving.

CAMPHORATED OIL

This is easily made for winter use by warming 40 c.c. of olive oil and then dissolving in it 10 grams of camphor. Allow it to cool and bottle it.

MOTH REPELLENT

Naphthalene or p-dichlorobenzene are the repellents usually used, but their smell is objectionable to some people. A more fragrant repellent may be based on camphor and tincture of tolu. You will first need to make a rough mould, such as will produce a disc with a central hole. A 1 in. length of 1½ in. internal diameter metal tubing, or a suitable tin the bottom of which has been cut off, will serve admirably. Press a disc of modelling clay and a short metal rod upright in the middle.

The ingredients are made up in the proportions of 2 grams of camphor, 5 grams of white wax (bleached beeswax) 3 grams of spermaceti, 3 c.c. of oil of almonds and 0·25 cc. of tincture of tolu. Melt the wax, spermaceti and oil at as low a heat as possible in a water bath or double boiler, add the camphor, and, when this has dissolved, remove the vessel from the bath and stir in the tincture of tolu. Pour into the mould and allow to set and grow quite cold.

Remove from the mould, thread a loop of tape through the central hole and hang up in the wardrobe.

SILVERING BONE

An unusual finish on bone is one of silver. The bone must first be degreased. If grease is apparent to the eye or finger, a preliminary boiling in water should be carried out. Let the water grow cold, skim off the fat, remove the bone and let it dry thoroughly. Soak the bone in benzine to remove any further traces of fat, remove, allow to dry off, and soak in a 4 per cent weight in volume solution of quinol. Transfer the bone to a 2 per cent weight in volume solution of silver nitrate. Silver is formed on the bone. When no more action seems to be taking place, remove and rinse the article. Let it dry and then buff up bright.

If desired, this silvered bone can form the basis of a means of electro-plating bone, for the silver provides a surface for deposition.

STRENGTHENING GUM

Gum arabic may be made to yield a more adhesive mucilage by the addition of aluminium sulphate. Put 75 grams of gum arabic in 175 c.c. of water and leave until dissolved. An occasional shake helps. To this add a solution of 2 grams of aluminium sulphate in 20 c.c. of water, followed by 2 grams of phenol as a preservative. Caution: solid phenol should not be handled, for it causes blisters; use a spatula when weighing it. Another way of preventing mould formation is to place a piece of camphor in the gum instead of using phenol.

SOLIDIFIED METHYLATED SPIRIT

Campers who dislike carrying methylated spirit for priming pressure stoves will appreciate a solid form. Proprietary solid primers are expensive, whereas this is extremely cheap.

Put 100 c.c. of methylated spirit, 3 grams of dry soap shavings and 0·2 gram of shellac into a dry tin standing in a pan. While stirring with a thermometer, pour hot water into the pan until the temperature of the mixture in the tin stands at about 60 degrees Centigrade (140 degrees Fahrenheit). If you register a temperature much higher than this, causing the spirit to boil, remove the tin and allow to cool somewhat.

Stir until the solids have dissolved. The solution may then be poured into a warmed screw-capped jar, a press lid tin, or into moulds of glass tubes set upright in modelling clay, and allowed to set. Which you choose is a matter of convenience of carriage. Using a jar or tin you can carry plenty. If tube moulds are used, the resulting sticks may be accommodated in old push-up cosmetic tubes, and are suitable for weekend camps. In either case a piece of the fuel is cut, placed in the priming cup and lit in the usual way.

PAPER-TO-WOOD MOUNTANT

Engravings, prints and photographs should be stuck to wood by means of a special mounting composition. Into a screw-capped bottle put 100 c.c. of methylated spirit, 25 grams each of Venetian turpentine and sandarac, 6·4 grams of mastic and 12·5 grams of rosin. Screw on the cap and shake occasionally until the solids have dispersed. Brush on to the wood and press home the paper.

Instructions for making

A PERPETUAL CALENDAR

★★★★★★★★★★★★★★★★★★★★★★
★ ★
★ Hobbies Kit No. 3440 for making ★
★ this novel Perpetual Calendar ★
★ contains all wood and accessories ★
★ including chain, date pad, orna- ★
★ mental dog, etc. Kits price 9/11 ★
★ from branches or by post (2/- ★
★ extra) from Hobbies Ltd, Dere- ★
★ ham, Norfolk ★
★ ★
★★★★★★★★★★★★★★★★★★★★★★

A PERPETUAL Calendar is a happy choice for a gift which extends its personal thought throughout the year. The date is changed daily by means of the neat calendar pads supplied by Hobbies Ltd.

Our model illustrated is 8 in. wide by 5½ in. high by 3¾ in. deep, and as you can see, has a novel theme — that of a man holding on to his dog by means of a chain and with the wording 'Never be late for a date'. It is intended to be stood on a mantelshelf, sideboard, or other flat surface, or alternatively can be fixed to a wall with the provision of a suitable backing block at the top.

The figure of the man in a hurry is in the shape of an overlay and the model dog is of the terrier type, fashioned in metal and very nicely finished. This is also contained in Hobbies kit.

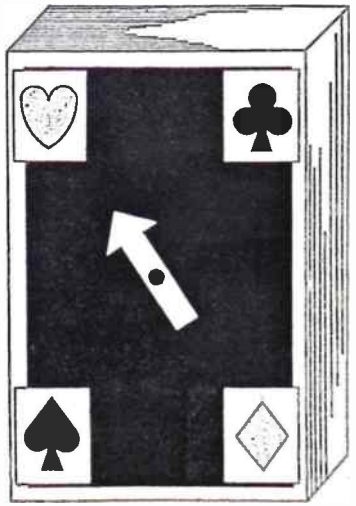
All the parts required are shown full size on the design sheet. These should be traced and transferred by carbon paper on to their appropriate thickness of wood, then cut out neatly with a fretsaw and cleaned up ready for assembly. Incidentally, the lettering is intended to be cut out from the back panel. Those who are handy with a paint brush can, however, add the words in hand lettering rather than cut them out. It is a matter of personal choice.

The figure of the man (piece 7) is glued in the position shown by dotted lines to the back (piece 1). To piece 1 can next be added pieces 4, 5 and 6 which make up the holder for the calendar pads.

Piece 1 is then glued to piece 2 and a strengthening piece of triangular fillet (piece 3) is glued along at the back.

At this stage, clean up the work thoroughly and add the finish, which will be by painting to colours of choice. The clothing on the man can be represented by a suitable piece of cloth glued on as indicated in the main illustration. The hands, boots and facial features will be painted on to the wood. A screweye is inserted into the man's hand and to this is attached one end of a piece of link chain. The other end of the chain is attached to a piece of cord round the dog's neck, and should of course be of suitable length. The dog stands firmly on its four legs and is positioned as shown in piece 2. Small holes can be made where the paws fit into piece 2 to make a firmer setting.

A Trumps Indicator



CARD players will appreciate a simple trumps indicator which is both novel in appearance and easy to use. The card box itself will form the basis of the gadget, but its function as a storage place for the cards will remain unaltered.

You will need one pip of each suit cut out of old playing cards, a paper fastener, a strip of Sellotape and a little arrow cut out of cardboard. Use the paper fastener to fix the arrow pointer to the middle of the card box back. The colour of the arrow should contrast well with the colour of the box.

Glue the four pips, in the proper order, at the four corners of the box, around the pointer. It now remains to fix the strip of Sellotape over the 'prongs' of the paper fastener, inside the box. The tape will prevent damage to the cards when they are returned to the box. (A.E.W.)

WITH ROD & LINE

IN fly fishing for chub you can, in addition to using flies, both artificial and natural, use plastic lures. Bait fishing makes use of shot to get your bait down to the bottom and is useful when you find long stretches of bushy banks where it would be impossible to cast a fly. Here your float tackle can be guided under the overhanging foliage.

CATCHING THE FOXY CHUB—2

By 'Kingfisher'

Your trout rod is just the thing when casting a fly for chub. Your flies should be what are known as the Palmer type; that is, they have a bushy body which is made by taking the hackle right along the shank of the hook and finishing near the bend. Although chub will take the flies tied small, as for trout, they much prefer the aforementioned type. I tie my own flies and have found that a black hackle ribbed with orange tinsel and with a further couple of turns of orange-coloured hackle at the eye is a very successful pattern for these fish. Some chub flies have a bit of white kid tied in at the tail but I dispense with this and put on a couple of turns of silver tinsel instead.

You should cast the fly down and across and don't worry about the 'wake' which the fly will set up as it comes across the current. With trout this would be fatal to your sport but chub don't seem to mind it. Trout know that a tiny fly hasn't the strength to swim across the current, just as the chub knows that a much larger fly will be able to make its way across a similar stream.

My method is to fish one fly only at all times. The reason for this is two-fold. When a chub is hooked it will make for its holt of tree roots and any flies swinging loose will be snagged up, with a break as the result. Your chub is left with a fly in its lip, a length of your cast attached to it and the whole lot anchored o a snag by another fly. If your fish isn't trong enough to break away then it will die a slow and miserable death. The second reason is that there is no need to risk losing your tackle by being too greedy.

There are, of course, many other dressings for Palmer flies and it is interesting to experiment in making up your own. There's a good deal of satisfaction in creating a pattern of your own and taking fish with it. The bluebottle is a good natural fly to use, as also is almost any large fly, but they take some catching when you are wanting them.

Regarding plastic lures, the maggot can be cast in exactly the same manner as the fly but you require a rather different technique for caterpillars and tadpoles. The caterpillar should be cast down and across and here I would recommend putting your threadline reel on the fly rod. You can then let off quite a length of line as your caterpillar goes downstream. Every few yards check the line so that the caterpillar lifts and swings in the current and send it along under the bushes where chub expect such insects to come from. You can use a light float on the line if you wish but I dispense with this.

The tadpoles are yet another proposition and these should be fished close in as they are usually found in shallower water and near weeds. Your chub would look with suspicion on any tadpole swimming serenely about in midstream and away from its fellows because it knows that tadpoles just don't behave in such a manner.

Let the current take it along a little way and then hold it so that it gets a lift up and the flow of water will make the thin tail wiggle very realistically. If you use your fly line and reel carry out the same tactics and don't put weight on the line or cast to get it out. Whichever tackle you use remember to fish the tadpole near weeds and always in the shallower water. All these lures have been personally tried out and found to be good but you must remember that it is an artificial with no life so that you must impart the movements which are expected by the fish. If you don't get fish don't blame the lure. Rather you should go out and make a study of the creatures you are trying to copy, watch their movements and when you have learnt how to give your artificial similar movements then you'll start catching fish.

In spinning your tackle should be light and your spinning rod brought into use. Your lure should be on a swivelled trace and you must put a small half-moon lead on the line above the top swivel to prevent line kink. Your lure should be a small blue and silver Devon, a small trout spoon or any small lure and you will find a quill minnow an excellent lure for chub. For this type of fishing I use a spool which carries a line of 3 lb. B.S. only. Heavier lines can put the fish down and in any case are not required for chub.

I can also recommend plug fishing for chub but I have never yet seen plugs small enough in the tackle shops so I make my own. The information I've given in the past will serve for plugs for chub as all you need to do is make them much smaller. I find that the plugs should be the type that will sink easily and this is allowed for when making them up but they don't want to plummet down like a stone. A quicker turn of the reel handle will take them well down if you have got the weight right. Make a few up of slightly different weights and then take them to the water and try them out.

FOUR BOOKS ON THINGS TO DO

HOBBIES AND HANDICRAFTS — Many popular hobbies such as bookbinding, pewter work, leatherwork, photography, etc, are fully covered, and very well illustrated. Readers of *Hobbies Weekly* will be particularly interested in the section devoted to fretwork.

MODEL MAKING AND CARPENTRY — A constructive and thoroughly practical introduction to these popular hobbies, which is especially valuable for the beginner. How to make typical projects in this field is adequately described and illustrated.

ABOUT THE HOME — Explains a host of really useful jobs and repairs from mending a fuse to the simple upholstering of furniture. With these instructions, spare time can be put to really good use, and money on repair jobs saved into the bargain.

OUTDOOR PASTIMES — Camping, walking, cycling, bird watching, and fishing are among the ever-popular open-air pastimes described in this handbook. A description of basic equipment for each particular pursuit, and how to get the best out of your pastime, are very valuable features.

All the above books are published by Ward Lock & Co. Ltd, price 4s. 6d. each.

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... THERE'S THE STRENGTH OF A HERD OF WILD ELEPHANTS

with an invisible ease and economy which makes most tools and fixing methods "old-fashioned"

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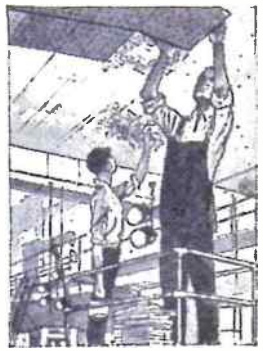
Decorative wall-boards and laminated plastics fix to almost any surface, be it plaster, metal or wood. And although they can be screwed, nailed or pinned, few builders would care to spoil such fine surfaces. Instead, manufacturers invariably recommend fixing with Evo-Stik 'Impact' Adhesive. And it is mainly due to the speed, economy and amazing strength of Evo-Stik that 75 million square feet of these materials are fixed each year.



CEILINGS THAT SEAL SOUND

Only a few years ago industrial installations of Acoustic Tiles were laboriously and expensively fixed with screws and bolts. Often with a maximum speed of around 30 tiles an hour. Demand was low due to high installation cost. But to-day; two workers using Evo-Stik 'Impact' Adhesive install up to 300 tiles an hour. Result; new ceilings that silence sound; and new acoustic materials, shapes and decorative effects: through the speed of Evo-Stik.

CARS THAT LAST LONGER

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Fun in the breeze with...

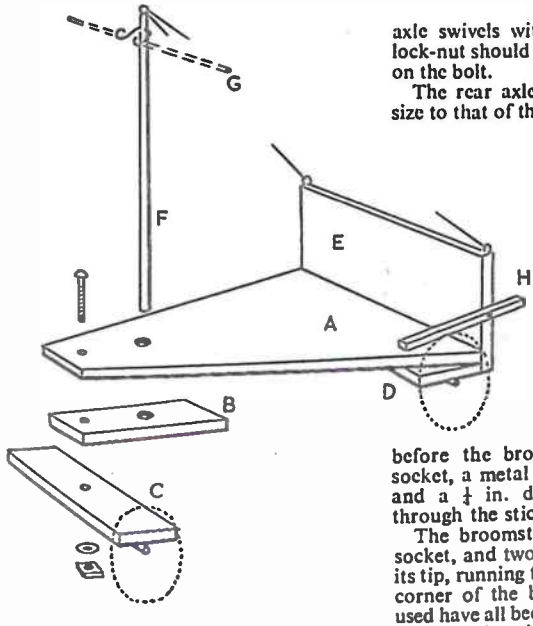
A LAND YACHT

By

A. Liston

A LAND YACHT which will provide hours of amusement whenever there is a breeze blowing is surprisingly easy to make. Besides the wood for the base, the main requirements are two pairs of wheels with axles, a broomstick, a cane and a sack.

The platform A is wedge-shaped, and made of ½ in. thick wood. The one illustrated is 33 in. long, 15 in. wide at the rear, tapering to 5 in. at the front. But these widths may be altered to suit the length of axles available.



A strengthening strip B of ¾ in. thick wood, 5 in. wide and 18 in. long, is screwed to the underside of the front of section A. The axle beam C, also of ¾ in. thick wood, is 5 in. wide and 15 in. long.

A hole for the 3 in. long bolt on which the axle pivots is drilled through sections A, B and C, and after the wheels and axle have been attached to the axle beam, passing behind the hole drilled for the bolt, the front wheel assembly is completed.

The nut should be tightened until the axle swivels without any 'play' and a lock-nut should then be screwed in place on the bolt.

The rear axle beam D, is of similar size to that of the front, and with wheels attached, it is screwed to the underside of the platform, flush with its rear edge. The back plate E is 15 in. wide and 9 in. high, and is screwed to both sections A and D. For extra rigidity, L-shaped metal brackets may also be used here.

A hole large enough to take the broomstick mast is drilled through sections A and B, 6 in. from the front, but before the broomstick is glued in its socket, a metal eye is screwed to its tip and a ¼ in. diameter hole is drilled through the stick, 3 in. from the top.

The broomstick is then glued in its socket, and two cords tied to the eye at its tip, running to hooks screwed to each corner of the backplate. If the wheels used have all been of the same size, it will be noted that the mast is raked slightly; this is intentional, and gives a more pleasing appearance.

The sail is made from a sack, which is opened out by cutting down the seam at one side and along the bottom. A 2 ft. wide and 3 ft. high piece of sackcloth is tied along its upper edge to a 24 in. long spar G, for which a cane or piece of ½ in. diameter dowel rod can be used. The spar is wired or tied to the mast through the hole previously drilled.

A length of cord is tied to each lower corner of the sail. These cords are held in the hands and should not be tied to the framework, so that in the event of a strong gust, they can be released quickly.

A simple brake H, is made by screwing a strip of 1 in. by 1 in. wood to the backplate, so that when the end of the strip is pressed down, it bears on the tyre.

Steering is done with the feet, as the illustration shows, and the angle of the sail is controlled by the cords held in the hands. It is best to try out the yacht in a steady breeze, rather than in a gusty wind, until one has become accustomed to the way it handles. Choose an open space with a hard surface, such as a playground, and not a roadway. Under the right conditions, you will find that land yachts can be surprisingly speedy.

EMBOSSED CHRISTMAS CARDS

WE have just had the opportunity of examining and experimenting with the Embossed Christmas Card Outfit, which represents excellent value for an outlay of only 12s. 6d. (including postage). It embodies a highly successful process which enables the amateur to make individual greetings cards bearing an embossed and very professional finish in silver or gold. This new approach to the making of 'personal' Christmas cards will be appreciated by our readers.

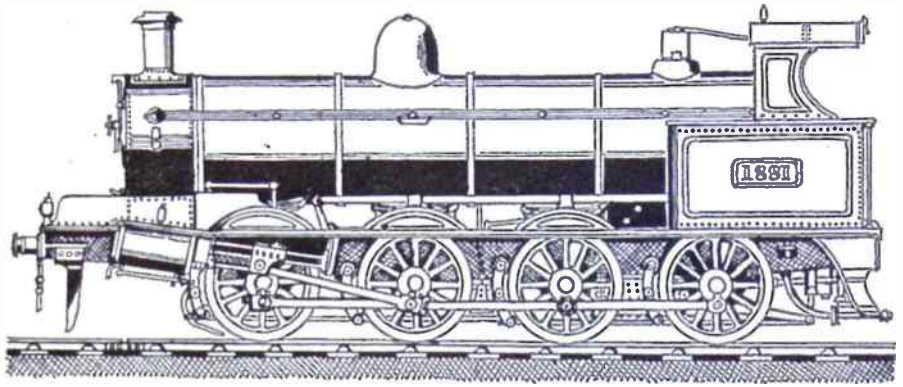
Four rubber stamps bearing Christmas motifs and an ink roller are included in the outfit, which contains enough materials (card, ink, decorations, adhesive, etc) for producing at least fifty cards according to size and shape, in an endless variety of patterns. The application is quite simple and users can confidently 'go into production' after a few trial runs in the handling of the rubber stamps.

Enquiries concerning these outfits should be sent to The Embossprint Company, 146 Fleet Street, London, E.C.4.

Interesting Locos—No. 39

THE WEBB COMPOUND ENGINES

THE first four-cylinder 0–8–0 Compound Coal engine designed by Mr F. W. Webb for the London & North-Western Railway, left the Crewe erecting shop in August 1901.



London & North-Western Railway No. 1881 F. W. WEBB'S first eight wheels coupled 4 cyl. compound coal engine. Crewe No. 4155, Aug. 1901

This engine No. 1881 (Crewe No. 4155) was followed by a further nine of the class in September of the same year. These were numbered 1882–1890, and their Crewe works numbers were 4156–4164. In December a further ten were built, Nos. 1891–1900, Crewe Nos. 4185–4194, all in the same order. These first twenty engines of 1901 were put to work on the heavy coal and mineral traffic of the line, and proved at the time quite capable of these duties. After a short period, however, it was found that there was a concentration of weight at the front end, and in 1904 George Whale subsequently modified several of the class by adding a pony truck. As thus modified they were known as Class 'E', whilst the original engines were Class 'B'.

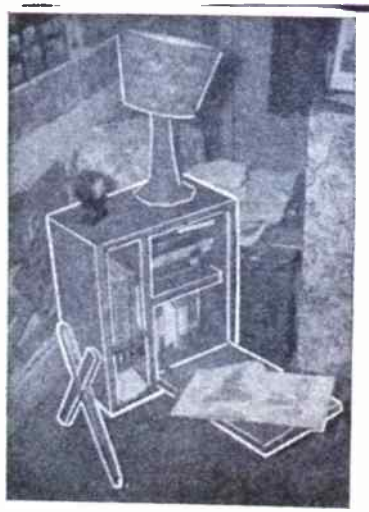
Construction of the Class 'B' engines was continued by Mr Webb and Mr Whale from March 1902 up till August 1904, when the last of the class, No. 1543, Crewe No. 4411 was built. This engine was one of many of the class which were finally converted to the large boiler 'G1' class superheater 'simple' type by Mr C. J. Bowen-Cooke, No. 1543 (as L.M.S. No. 8952) being converted in February 1924. Several of the 2–8–0 'E' class also came in for this conversion.

In January 1923 the L.M. & S.R. took over sixteen L. & N.W.R. Crewe Compound 2–8–0 engines, which were numbered L.M.S. 9600–15. Nos. 9600–09 being Class 'E', whilst Nos. 9610–16 had been previously provided with larger boilers by George Whale in 1906–07, and were known as Class 'F'. The original 0–8–0 'B' class engine No. 1881 was never rebuilt or modified and she finally finished her working days as L.M.S. No. 8900, being withdrawn in her original condition in 1928. In 1925 she was specially painted in her original L. & N.W.R. livery and number for the L.N.E.R. Centenary at Darlington and this was the last L.N.W.R. engine to be so treated.

The Crewe engine diagram No. 28 gives the following details of the original '1881' 'B' class: cylinders (four), two outside high-pressure 15 in. by 24 in. stroke, two inside low-pressure 20½ in. by 24 in. stroke. Ratio 1·87. Wheels, diameter 4 ft. 5½ in. Boiler heating surface, tubes 1,630 sq. ft., firebox 123 sq. ft., total 1,753 sq. ft. Working pressure 200 lb. per sq. in. Grate area 20·5 sq. ft. Centre line of boiler from rails 7 ft. 10½ in. Height to top of chimney 13 ft. 0½ in. Wheelbase 17 ft. 3 in. equally divided.

Weight engine in working order, on leading wheels 14 tons 4 cwt., on driving wheels 17 tons 10 cwt. (all four cylinders actuated the second axle), on intermediate wheels 14 tons 4 cwt., and on trailing coupled wheels 9 tons 10 cwt., total 55 tons 8 cwt. The tenders were of the standard Webb pattern with wooden frames, having six wheels of 3 ft. 9 in. diameter, tank capacity of 2,000 gallons coal space of 5 tons, and weighing full 26 tons 12 cwt.

(A.J.R.)



A READER'S CONTEMPORARY CABINET

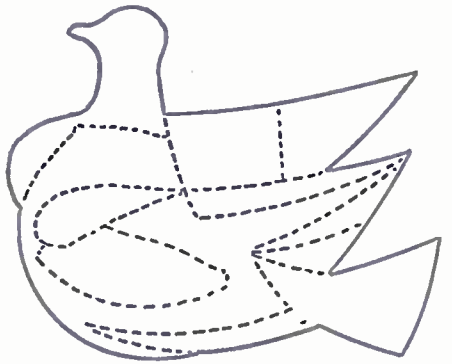
DETAILS of modifications which have been made to Hobbies Design No. 3144 for a Contemporary Bedside Cabinet have been passed to us by Paul Pickering of Bedford. In particular, the door has been made to hinge downwards instead of at the side, and held up by cabinet stays. This, of course, facilitates removal of contents in some instances and is a personal preference. Mr Pickering used shellac varnish with wax polish to produce a light finish.

The Hobbies kit for this project which is ideal as a bedside cabinet and measures 27 in. high by 18 in. wide, costs 72s. carriage free from branches and Hobbies Ltd., Dereham, Norfolk.

NEWSPRINT MARQUETRY

YOU will probably have seen many examples of marquetry pictures made by using a variety of wood veneers glued on to a wood base. Here we describe a similar method but our material is much cheaper and easier to work for it is nothing more than newsprint. While the process itself is something like making and assembling a jigsaw you also have the fun of deciding the shape.

We first prepare a line drawing on a reasonably large sheet of drawing paper. You may use white paper but tinted pastel paper can be used to better advantage since it will make a suitable background. The main requirements of the drawings are only the outline plus any distinctive details it is necessary to incorporate and the drawing itself can be either an animal or a pictorial scene.



Having prepared the basic drawing on a sheet of paper, which will ultimately bear the finished picture, we make a tracing on transparent tracing paper. We then have to decide how to treat various parts of our sketch by sticking on newsprint, some light in tone and some much darker.

Here we must mention that when we use the term newsprint we mean black and white printing from newspapers and magazines. From experiment we find that the ordinary newspaper is not to be recommended since the paper is pulpy and too absorbent for perfect adhesion. You will find that magazines which are printed on better quality paper are much better to handle and the parts will stick to the base without trouble if a good adhesive is used.

Collect a few magazines, cutting out and grading columns of typescript, pictures and items into their respective tones as near as possible. You will discover that the advertisements are as good as anything since they often bear illustrations or drawings, and portions of these can be used effectively for detail work. Moreover, the characters are usually much larger and make quite distinctive features for the construction. You may also require some strips of unprinted paper which can be taken from the margins.

It is advisable to cut some of the typescript on the diagonal when the lines of print will appear at an angle on the picture. In brief, you require as large a variety of newsprint as you can get, vertical, horizontal and diagonal typescript, pictures, bold lettering and textures all graded into tones ranging from black to white.

With the material and drawing ready to hand it is only a matter of assembling the picture and for this you will require a pair of scissors, some carbon paper, and some adhesive.

In the illustration you will see the completed assembly of a picture of a duck while the diagram shows the preliminary treatment. In the latter you will see that we first sketch an outline and the dotted lines indicate how to divide the shape into sections for the wings, tail, etc. It is sometimes a help to mark those sections where dark tones are desired by means of a few pencil lines or shading to give some idea.

Assuming we start with the neck and head of our duck we select an appropriate piece of newsprint, place this on the table with a piece of carbon paper on top. Now place your tracing on top of this, marking out the shape of the part required. Cut out the newsprint to the prepared shape with scissors so that there is no trace of the carbon line, testing for size before sticking into position. Any trimming should be done at this stage. Then apply a little adhesive to the back of the cut-out portion and attach to the base paper. And we continue to make tracings of different parts, cutting out and fitting together in the same way until the picture is completed.

In some cases the fragments may overlap but those on the surface must be accurately cut for neat pictures. Moreover, if one piece does not meet with your approval — in terms of tones — you may replace with another and it is quite a simple matter to make alterations before sticking on to the paper.

We have not made a background for our illustration since pastel paper was used but no doubt you will realise that if one is required it must be the first item to be attached, hence our earlier suggestion of tinted papers. Birds flying in the sky can be added by cutting V shapes and sticking these on at an angle and no doubt you will think of other additions.

If you also use scraps of coloured typescript or coloured advertisements from the magazines you will be able to add touches of colour here and there. Ships, yachts, and the like make good pictures while you can make some really novel animal pictures. So you may mix black and white newsprint with colour or endeavour to make coloured pictures, which are a little more difficult but very fascinating. And as there are no set rules we think the addition of tiny details with water-colour can be permitted.

(A.B.)

Replies to Readers

Quick-setting Cement

AS I am in need of a very hard quick-setting cement, I had thought of using that such as dentists use for filling teeth (the white type), and would be most grateful if you could let me have the formula. (D.P. — Bolton.)

A HARD and quick-setting dental cement of the white type can be produced when needed by mixing zinc oxide with half its bulk of silica and then grinding this with enough zinc chloride solution of specific gravity 1·260 to form a thin paste. This sets rapidly, and must thus be used at once. The zinc chloride solution need not be made up freshly each time, but may be kept as a stock in a closed bottle.

* * *

Removing Tar

THE wings and sides of my car are spattered with tar; is there a way of removing this without damaging the paint work? (A.D. — Birmingham.)

SPONGING with either paraffin or methylated spirit will remove the tar provided this has not dried out too hard. They are highly efficient with fresh or fairly fresh tar. We recommend the use of these first. If the tar has become very hard and resistant, rub with creosote (by means of a rag tied to a stick, for contact with the hands will produce blisters).

* * *

Grinding a Glass Stopper

I HAVE an old decanter, but the stopper does not fit as it is slightly on the large side; can you tell me how to reduce it slightly in diameter? (N.L. — Nottingham.)

PRESUMABLY the decanter and stopper are of glass, in which case the only feasible way of reducing the diameter of the stopper is by grinding. If a lathe is available, the stopper can be held in a chuck, and the grinding accomplished by applying a coarse carborundum stone to the conical surface, whilst keeping the whole well lubricated with water. In the absence of a lathe, the best plan is to make a conical hole in a piece of wood, and to use coarse carborundum grinding powder and water, and rotate the stopper in the conical hole until sufficient has been ground away to suit your purpose.

A Water Resister

CAN you tell me, please, the name of a chemical or powder which when rubbed on the hand resists water? (E.G. — Poole.)

THE substance referred to is lycopodium powder. When rubbed on the hand it forms a water-resistant 'glove'. It is obtainable from laboratory furnishers.

* * *

Water Divining

I SHOULD like to know how to become a water diviner. (H.L. — Swindon.)

THE art of 'dowsing' or water-divining by means of a rod, is of immemorial antiquity. The rod normally used is a forked twig of hazel or willow. The two ends of the fork are held tightly, one in each hand with the single end pointing horizontally outwards. When near or over water (subterranean), the twig twitches and pulls vigorously downwards, if the holder possesses the unknown power of 'divination'. There is no known reason for the power — it cannot be learnt; either you have it, or you do not. Trial will soon show if a person has this super normal perceptive power — as real but as obscure as the homing instinct in pigeons.

* * *

Is It Gold?

I HAVE a small ornament which I believe to be gold, although not stamped. Is there a method by which I can find this out at home? (T.G. — Bradford.)

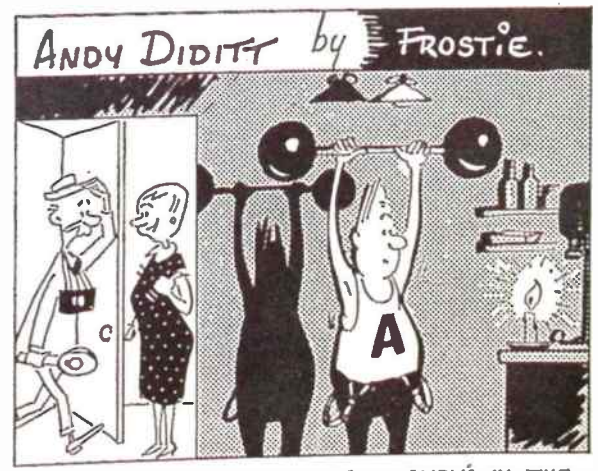
YOU should buy a little strong nitric acid from a chemist, and apply a small drop to a hidden part of the ornament with a glass rod drawn out to a fine point, or with the edge of a glass stopper. If the nitric acid spot shows no change in colour in half a minute, the ornament is gold. With brass and other alloys resembling gold, the nitric acid spot immediately becomes green, fizzes and then turns blue. The carat number cannot be determined by the nitric acid method of course. This is beyond home determination and is a matter for a goldsmith.

* * *

Home-made Stain

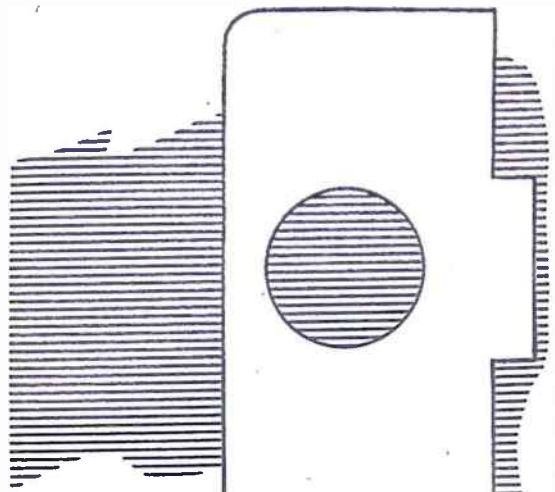
I HAVE five rooms and wish to stain the floors about 3 ft. wide all round. Would it be cheaper to make my own stain (T.J. — Salford.)

THE cheapest stain is permanganate of potash in water. This darkens the wood but needs several applications. The next cheapest is dark oak powder stain, soluble in water. A packet of this costs but a few pence and is enough for a quart of water. Apply it hot and make sure you have enough to treat each floor at one application, as it may prove difficult to mix a second lot to exactly the same tint.



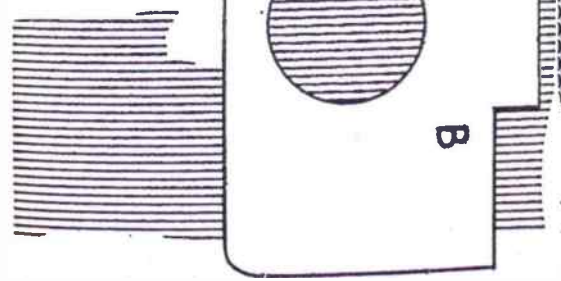
"GO RIGHT THROUGH, MR. WEST — ANDY'S IN THE DARKROOM DOING SOME DEVELOPING."

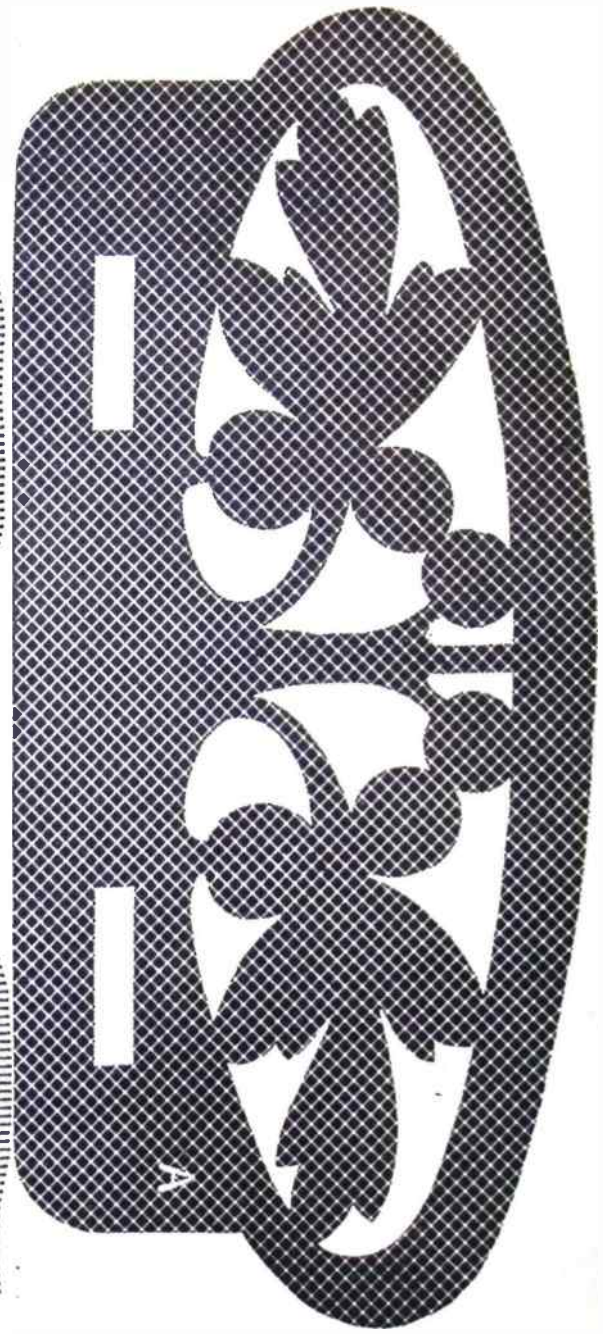
PIPE RACK PATTERNS



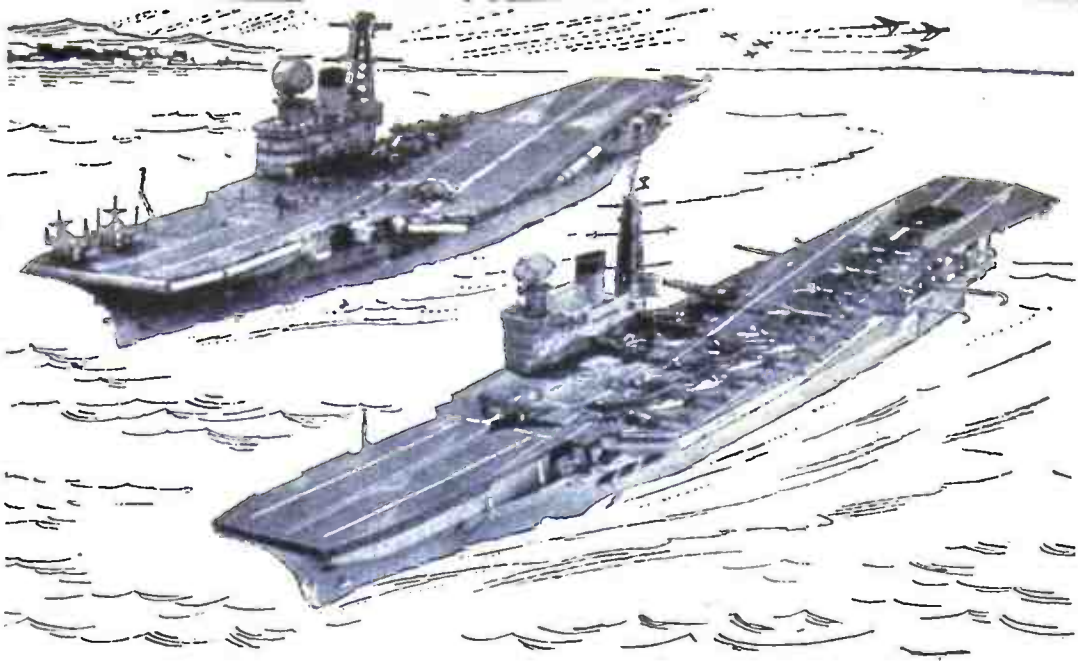
CUT one each of A and B from ¼ in. wood and glue together. Stain and varnish or finish by painting. Suspend from the wall by means of a wall hanger screwed to the back. (M.p).

USE YOUR FRETSAW





Printed by BALDING + MANSELL, LTD., London and Wisbech, and Published for the Proprietors, HOBBIES LTD., by HORACE MARSHALL & SON, LTD., Temple House, Tallis Street, E.C.4. Sole Agents for Australia and New Zealand: Gordon & Gotch (A'sia.) Ltd. For South Africa: Central News Agency Ltd. Registered for transmission by Canadian Magazine Post.



Just like the real thing!

Believe it or not, the nearer one is the Airfix model of H.M.S. "Victorious", 1/600th scale (Kit 6/-). Behind it is a picture of the real thing.

That's how wonderfully realistic Airfix models are. Close attention to every detail gives them their faithful-to-the-original look—makes them true collector's pieces. And every Airfix series is to a constant scale. This means Airfix models look proportionally right, one against another, because they *are* right! You can't beat Airfix for realism—or value.

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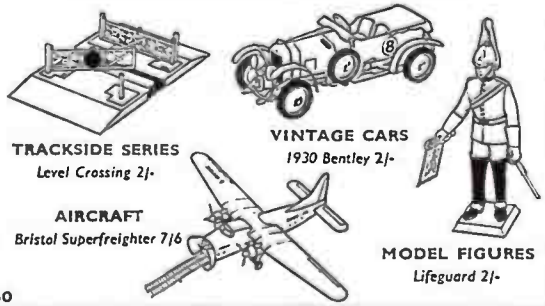

S160

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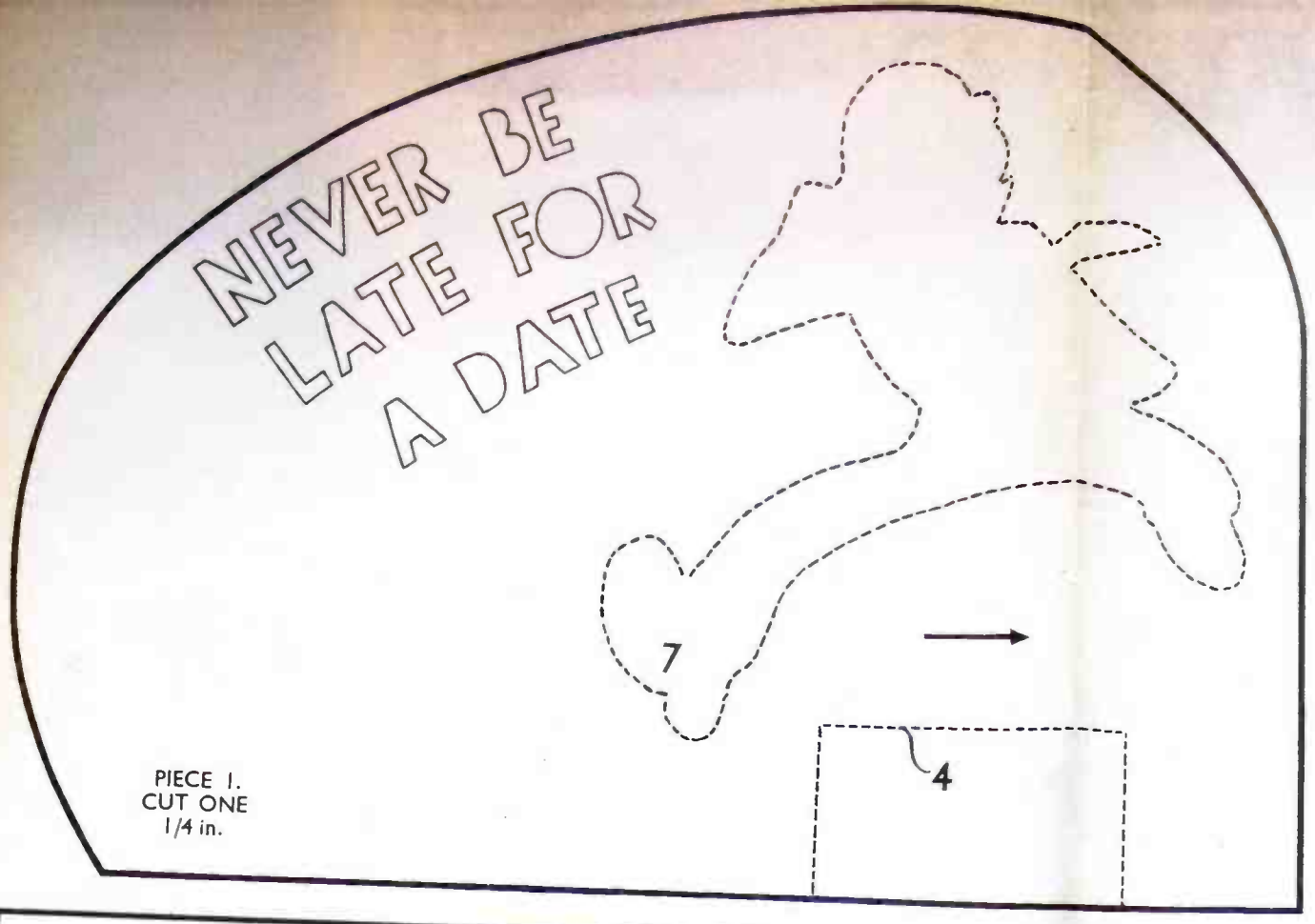
Hobbies DESIGN No. 3440

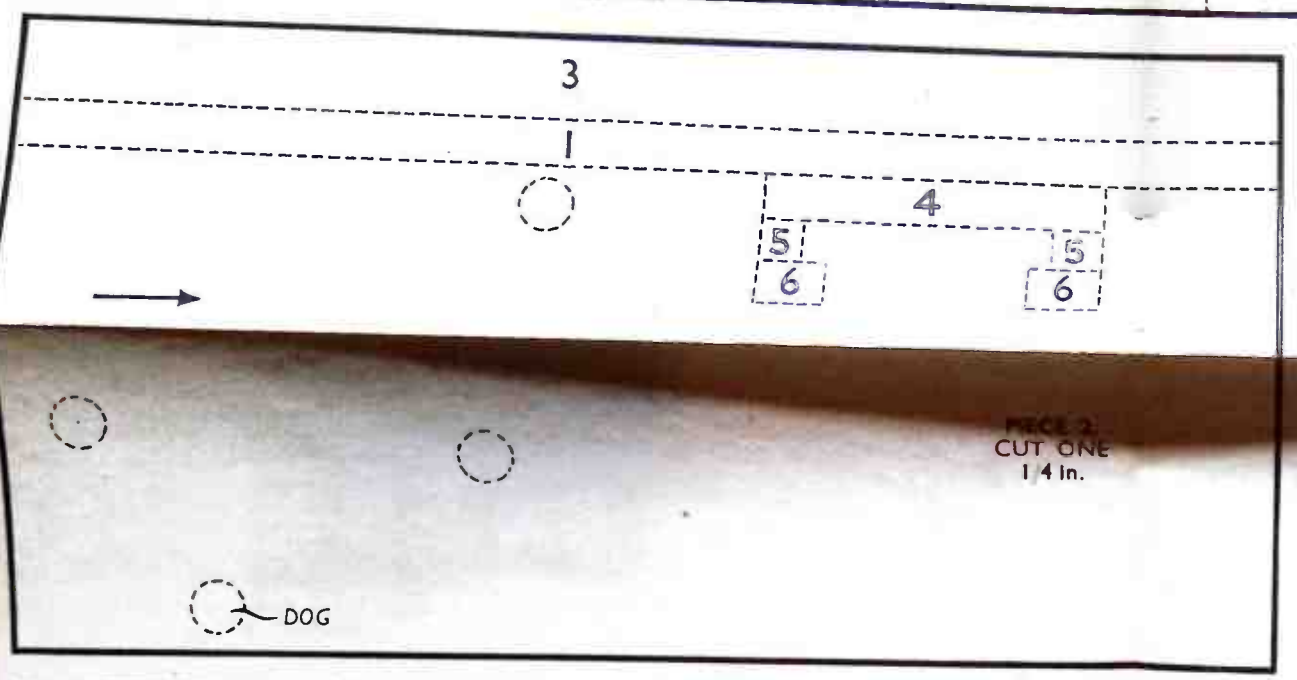
NOVEL PERPETUAL CALENDAR

SIZE:
8 ins. WIDE
5½ ins. HIGH

A KIT OF MATERIALS FOR MAKING THIS DESIGN IS SUPPLIED BY HOBBIES LIMITED, DEREHAM, NORFOLK. PRICE ON APPLICATION.



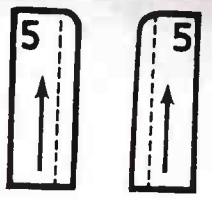
PIECE 1.
CUT ONE
1/4 in.



PIECE 2.
CUT ONE
1/4 in.

PIECE 4.
CUT ONE
1/4 in.

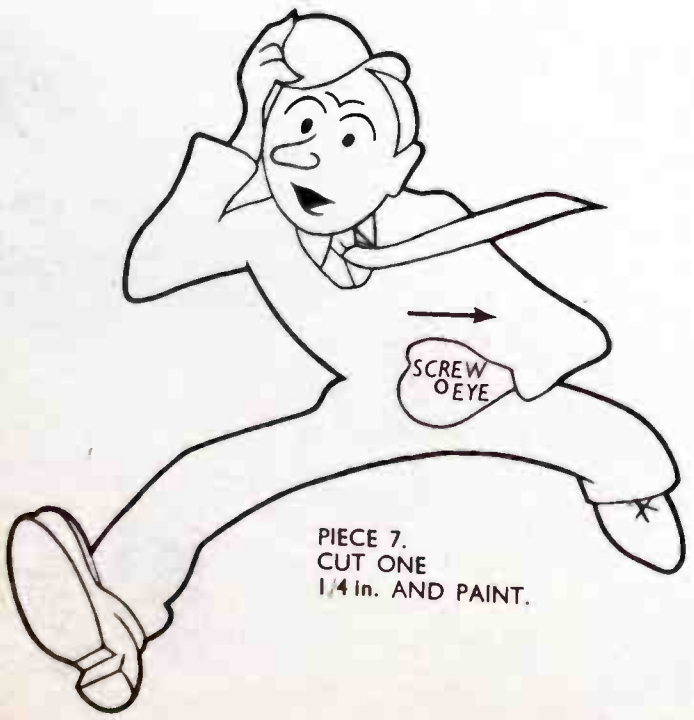
PIECES 5.
CUT ONE
OF EACH
1/4 in.



PIECES 6.
CUT ONE
OF EACH
1/4 in.

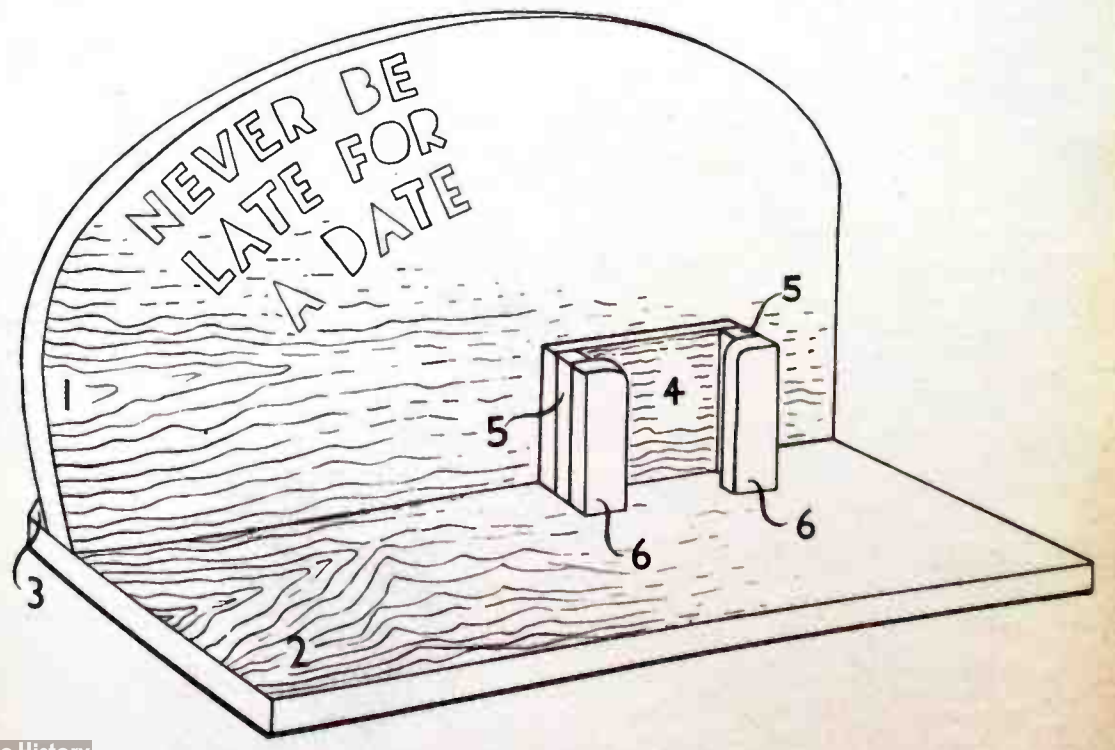
THE ARROWS INDICATE DIRECTION OF GRAIN OF WOOD.

PIECE 3. CUT ONE FROM TRIANGULAR FILLET.



PIECE 7.
CUT ONE
1/4 in. AND PAINT.

NOTE.—Cut to the outside of thick lines.



PRINTED IN ENGLAND.